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RELATION OF PHYSIOLOGY TO CLINICAL MEDICINE *

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The science of physiology, which is concerned with the normal functions of the animal body, is the basis of medicine and surgery, which are concerned with the abnormal functions of the human body.

Until recently in the medical schools of England and Scotland, physiology was known as the "institutes of medicine," which literally means the foundations of medicine.

Physiology is the keystone in the arch of medical and surgical knowledge. On its security depends the security of the superstructure of medicine as a science.

Dean Lyon of the University of Minnesota has aptly described the relation of the preclinical sciences to clinical medicine in the following words:

> I saw that if I were intelligently to discuss the relation between laboratory sciences and the work of the clinical years, I needed to know something about the clinical years. So I followed a master of diagnosis in his day's work. I saw him percuss and auscultate; I saw him count corpuscles and analyze excreta; I saw him elicit reflexes and measure temperatures; I heard him speak of valves and pressure and enzymes and neurons and calories. I said: That man is not practicing medicine, he is practicing physiology. I watched a therapeutist at the bedside and found that he was not practicing medicine but pharmacology. I saw a surgeon earning a thousand dollars; I discovered that he was not practicing surgery but anatomy, pathology, physiology and high finance. Finally the relation I was seeking came suddenly into mental view. Anatomy and physiology and pharmacology and bacteriology and the rest are not the children of medicine; they are not the branches of an evolutionary tree; they are not handmaids; they are not stepping stones or preparatory stages, they are *it*. They are medicine itself.

Physiology is primarily a study of life. Therefore human physiology is a study of human life. Physiology must be studied on living organisms or on living parts of the organism. A knowledge of the subject is based on experiments that can be performed on man or on animals showing functions resembling those of man. The human animal should be used so far as possible in the training of medical students.

Probably in no other science does the student encounter as many theories as are found in physiology. These theories represent gaps in our knowledge which must be filled in by patient research. It is therefore highly important that every physiologist must be an investigator. The problems now confronting the physiologist are largely those concerning the chemistry and the physics of living matter.

In spite of the marvelous development in physiology and the method of teaching the subject there is a considerable and, in some respects, a growing lack of contact between physiology and practical medicine and surgery. The fault can be shared almost equally by the physiologist and the clinician.

On the part of the clinician there is a tendency to lag behind the scientific progress of his time. The busy practitioner soon discovers that he can "get by" by substituting to a great extent the "art of medicine" for the "science of medicine." The untutored "healer" has succeeded in doing this for many generations. The scientific developments in recent years have come on us at such a rapid pace that only the alert and energetic individual can consider himself up to date. There are undoubtedly at the present time many discoveries in the laboratory sciences that are ready and waiting for their application to clinical medicine. Empiricism must, however, continue until the clinician can find time to replace it with the known scientific methods, or until the demands of the investigator and the public can no longer remain unheeded.

In one of the leading medical schools it is customary for the clinical faculty to open its lectures to the junior class by advising the students to forget all that they have learned during the preceding two years since they are now beginning the study of practical medicine. This is no doubt a defense mechanism on the part of the clinician, which leaves him free to impart his own type of anatomy, physiology and biochemistry. He can use the old tombstone names in anatomy instead of the generally accepted BNA terminology, and his physiology need not be concerned with many developments of the past decade.

In justice to the clinical teachers it should be stated that in practically every medical school there are clinical teachers who keep abreast with the developments in the laboratory sciences and contribute to the sum total of knowledge in the fundamental sciences. In most instances these more alert clinical teachers have devoted a portion of their period training for research in physiology or allied laboratory subjects. The momentum thus attained will in most instances carry them beyond the routine of their everyday practice during the years to come. The investigative spirit, once kindled, will serve as a beacon to broaden their horizon and guide them into new pathways of thought and scientific investigation.

Unfortunately the physiologists, in some instances, have not seen clearly their duties as teachers of future physicians and surgeons. We are not training technicians in physiology but, for the most part, future internists, surgeons and specialists. This does not, how-

* From the University of Colorado School of Medicine and Hospitals.

* Chairman's address, read before the Section on Pathology and Physiology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 11, 1929.

ever, release the physiologist from his obligation to stimulate original thinking, and the creative instinct that seeks knowledge by the experimental method rather than by authority. Some of our physiologists revel in detail and their students are foundered by a mass of facts and theories, most of which are forgotten by the student immediately following the final examination.

Physiology cannot be properly taught as a series of essentially unconnected facts. Coordination and cooperation are major principles in the proper functioning of any organism just as they are in any complicated and smoothly working machine. If one is to gain a thorough understanding of the organisms or the machine, one must thoroughly understand the interrelations of all its parts.

A true knowledge of the physiology of the circulation cannot be gained merely by studying the mechanics of circulation and omitting its organic regulation. It is a breakdown in this regulation that primarily concerns the clinician.

The theories with regard to the urinary secretion are interesting, but they leave much to be desired when the student wishes to learn the physiology of the kidneys. He wishes to know the intricate relation of these organs to the body as a whole and something of their function in regulating the composition of the blood.

What has been said regarding the circulation and the kidneys is equally true of all the organs of the body. They cannot be properly understood if each is studied as a separated, isolated mechanism. They must be studied in relation to the entire body, and their interrelations and coordinations become the most important part of physiology in preparing the student later to recognize any disturbance in the normal functioning of the body or of any of its parts. The lack of coordination between physiology and clinical medicine has been in no small part due to the available textbooks on physiology. Most of the better textbooks are entirely too detailed and devote too much space to theories. The various organs are treated as isolated structures and too little space is given to the functioning of the body as a whole. Organic regulation may be briefly touched on in the chapters devoted to the various organs, but there is little attempt to clarify the coordination existing between all of the organs.

It may be a mistake to permit students to purchase a textbook. A teacher with a broad and thorough knowledge of the subject might be able to give a clearer picture and bring about a better coordination of the subject. The teaching of physiology should not be limited to the brief course given in the first or second year. Throughout his medical course, the medical student should be made conscious of the fact that he is constantly dealing with physiologic principles. It should be the duty of every clinical teacher to impress on his students the need of daily application of their knowledge of physiology to their clinical problems. When this is done, clinical medicine will become more definitely the science of medicine.

There is too much of a tendency on the part of the teachers of laboratory sciences to hold themselves apart from clinical medicine. The teachers in the first two years should be on the staff of the teaching hospital and should take an active part in the staff meetings and in consultations in the hospital. The laboratory man should not be considered a mere technician, as was the case in one of our large teaching hospitals in which the physiologist, after serving for five years as a nominal member of a hospital staff, was called on to assist in the repair of a kymograph attached to a basal metabolism apparatus.

Every teaching hospital should furnish facilities for clinical research, preferably in close cooperation with the laboratory departments. The clinician should be encouraged to devote a larger portion of his investigation to the living organism rather than merely to satisfying his curiosity in the autopsy room. A more careful study and application of physiology would illuminate many of the dark corners of clinical medicine.

The progress of physiology goes hand in hand with the development of clinical medicine and there is a mutual interdependence. The experimental method is used jointly by the modern physiologist and the modern clinician, and in the use of this method the clinician becomes a physiologist.

Physiology is not a stepping stone to clinical medicine. It is clinical medicine.

THE ETHICS OF OPHTHALMOLOGY *

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In humble gratitude I make a metaphorical genuflex for the distinction bestowed on me by election to preside over one of the oldest and most important sections of the greatest medical organization in the world. Truly it is an honor to be classed with the illustrious predecessors in this office—men who have been honored and revered by their colleagues not only in this country but all over the world where progressive ophthalmology is known.

We are living in an advanced age. Progress is so rapid that it seems wise to pause for a moment in this mad rush to indulge in a bit of introspection. Are we adhering to the principles long established by our predecessors? Are we not inclined to indulge somewhat in commercialism in the wild rush for things which are supposed to be progressive? Is not the multiplicity of apparatus a temptation to indulge in commercialism? While we progress in material things we should not lose sight of the fact that certain fundamentals are as a solid rock, firm and stationary. We must ever remember that we belong to an honorable profession which has for its chief function service. Our profession is not a business, for the chief function of a business is to make money. If a business does not make money, it fails and falls by the wayside. Sometimes I fear that spirit of commercialism which inspires an occasional colleague to take advantage of many appliances and apparatuses of precision, using them only for their psychic effect on their clientele rather than for the practical, scientific benefit of the patient. No matter what we do or what we give, as long as it is for the benefit of our patients, it is proper and ethical; but if any of this is done solely for our own benefit or for the benefit of our purses, it becomes blatant quackery.

What is good ethics for the East is, and should be, good ethics for the West, the South or the North; yet it is to be regretted that the profession is not a unit on this subject. In some parts of our country, custom permits the placing of a card in a medical journal setting forth the specialty practiced, whereas in other

* Chairman's address, read before the Section on Ophthalmology at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

parts of our country this would not be tolerated for a moment. By some physicians this is considered merely a matter for individual judgment; by others the offense is considered so grave that it is seriously deprecated. Let us stop for a moment to analyze this situation. Cicero would have said "cui bono"? The man in the street says "What's the use"?

I do not think such advertising in a medical journal accomplishes anything but some personal satisfaction to the advertiser. The leading ophthalmologists of our country do not indulge in it. By their works ye shall know them is absolutely true of the medical man. In the medical society a man's colleagues may have an opportunity to judge him and properly classify him. The proper place for the physician to begin to bring himself to the attention of his colleagues is in the local county medical society, which, after all, is the foundation of medical organization. When a man is able to do his work a bit better than his neighbor, the world will be ready to take notice of him and his proper reward will follow.

Some one has said that an honest man is the noblest work of God. I would amend it to read that an honest and sincere man is the noblest work of God. We know many men who are perfectly honest but who lack sincerity. We know some people who pose as eye conservationists; they are honest, no doubt, but are they wholly sincere? Likewise there are optometric technicians who violate all the rules of English pronunciation in a new terminology; they lack sincerity and, sometimes, even honesty. The optician occupies an important place, but he should stick to his last and maintain his proper relationship to the medical profession just as the druggist or pharmacist does. There is no objection to the druggist or pharmacist who sells a dose of castor oil directly to the public, but when he holds himself out as capable of making a diagnosis he oversteps his bounds and ceases, at least, to be sincere. Nor is there any particular objection under present economic conditions to the optician who sells glasses after making a simple refraction as long as he does not hold himself out as capable of making a diagnosis.

Is it not time for us, as members of this section of the American Medical Association, to rededicate ourselves to the noble principles of right, justice and ethics laid down by our illustrious predecessors?

500 Penn Avenue.

Rheumatic Fever in Children.—It is well known that rheumatic fever and its allied conditions tend to relapse most frequently in the spring months. Common experience shows that while children with rheumatic fever have few or no colds in the summer, in the fall they begin, after school opens, to have minor infections in the nose and throat. In the winter these colds assume a greater seriousness. They are more frequent; there is more response in the body and evidence of increasing activity of infections. Shortly following this period of intense reaction there is this tendency for the individual to show joint pains, chorea, carditis, etc. Predisposing factors, which in the years past were supposed to be the natural cause of rheumatic fever, may be of importance in causing the onset of an attack. These factors are about the same ones that are of considerable importance in the control and care of children with tuberculosis. Briefly, they are fatigue, either of the body or mind, intemperance, bad food, bad housing and exposure to contact infection. These ideas would reemphasize the necessity of supervision and controlling these secondary factors in order to exert any evidence on the occurrence of rheumatic fever and through the control of these factors much can be accomplished toward the prevention of heart disease.—McCulloch, Hugh: Rheumatic Fever as an Allergic Disease, *J. Iowa M. Soc.*, August, 1929.

SERUM TREATMENT IN TYPE I LOBAR PNEUMONIA*

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Pneumonia in man is not a single disease; the term includes a group of diseases, and today there is no more justification for making a diagnosis of pneumonia than there is for making a diagnosis of enteritis when the patient suffers from typhoid. This fact becomes fundamentally important when the question of serum therapy is involved. Although, as Tillett has shown, nontype specific humoral factors may be concerned in immunity to pneumococcus, yet the evidence so far available strongly indicates that the most important rôle in immunity to pneumococcus, and in recovery from infection with this organism, is played by substances in the serum which are effective only in relation to a particular type of pneumococcus. In most experimental animals recovery from pneumococcus infection, either natural or acquired, is followed by at least a temporary resistance to subsequent infection, and during recovery the blood of the animal acquires new properties. This is shown particularly by the fact that, when this blood or serum is injected into a second animal, this animal becomes resistant to infection with the same micro-organism. Since pneumococcus infections in animals are usually acute and rapidly fatal, it has been difficult to demonstrate that the serum of the immune animals has curative as well as protective power; but the observations of Blake and Cecil [1] in pneumonia in monkeys, and the more recent observations of Goodner [2] in pneumococcus intracutaneous infections in rabbits, have established the fact that in more slowly progressing infections in animals immune serum may be curative, even though the injections of serum are made a considerable time after the animals have been inoculated. No amount of evidence based on animal experimentation, however, no matter how suggestive that evidence may be, is sufficient to establish fully the curative value of immune serum when employed during the course of pneumonia in man. The final and ultimate test must come from actual experience, and at present the only criterion available is the saving of life.

Believing that our experimental studies indicated that, if the serum of horses highly immunized to type I pneumococci was employed in very large doses in the treatment of pneumonia due to this type of pneumococcus, the results should be favorable, my associates and I at the Hospital of the Rockefeller Institute began in 1913 to carry out this form of treatment. It was first necessary to develop a method for early diagnosis and this was accomplished. The first report on these studies was made in the same year and the results indicated that the large amounts of serum employed—repeated doses of 100 cc. were administered—were not harmful and that the treatment was apparently beneficial. From the small number of cases treated, however, no definite conclusions could be drawn. Although serum treatment in type II pneumonia was also tested in a few cases, experimental as well as clinical observations soon convinced us that serum treatment in pneumonia, if success-

* From the Hospital of the Rockefeller Institute for Medical Research.

1. Blake, F. G., and Cecil, R. L.: Treatment of Experimental Pneumococcus Type I Pneumonia in Monkeys with Type I Antipneumococcus Serum, J. Exper. Med. **32**:1 (July) 1920.

2. Goodner, K.: Experimental Pneumococcus Infection in Rabbits, J. Exper. Med. **48**:1 (July) 1928.

ful at all, was most likely to be efficacious in the cases due to pneumococcus type I. It seemed important, therefore, for us to confine our attention to this one group of cases.

It has been asserted that in such a study of a therapeutic agent evidence may be obtained only by carrying out simultaneous controls and therefore that only alternate cases should be treated. In the beginning this did not seem feasible, since the number of cases available to us in any one year was very small and, moreover, we were not interested at first in demonstrating the exact degree of efficiency of serum treatment but simply in finding out whether any evidence could be obtained of any effectiveness whatever. However, as soon as our studies gave evidence which convinced us, at least, that this form of treatment was useful, we did not feel justified as physicians in withholding a remedy that in our opinion definitely increased the patient's chances of recovery. The Hospital of the Rockefeller Institute is small and is not suited for the making of large statistical studies; that must be left to general hospitals with a large number of patients. Even in large hospitals, however, the value of employing the method of alternate controls may well be questioned, especially when, instead of alternate cases of the same type of pneumonia, alternate cases of pneumonia regardless of type are chosen. The alternate case method of control is not at all analogous to the mode of control employed in laboratory experiments, for instance, such as was used by Blake and Cecil in their study of the effectiveness of serum in treating experimental pneumonia in monkeys. Here both the controls and the treated animals could be given an infective dosage which in the absence of serum would invariably prove fatal. In this experiment in monkeys the value of type I serum could be conclusively demonstrated, but such final demonstration is impossible in human cases.

The superficial clinical evidence of effectiveness of the serum which we obtained in human cases was supported by several more refined observations. It was early found that the outcome in pneumonia is related directly to the occurrence of septicemia. The results of blood cultures yield the best prognostic information we have at present. The administration of immune serum was found to prevent the invasion of the blood by pneumococci or, if the bacteria were already present in the blood, to cause, in all but a very few cases, their prompt disappearance. Moreover, it has been shown, first by Neufeld and by Dochez and later by many others, that when recovery occurs the blood of the patient acquires the same immunologic properties, that is, agglutinating and protective power, which the immune horse serum possesses. While this does not prove that recovery is dependent on the acquisition of these properties, the experimental evidence is sufficiently suggestive to place the burden of proof that this is not the case on those who take the opposite point of view. It was observed that the administration of serum in less severely infected patients is quickly followed by the development of protective powers by the blood. When the patients are very severely affected, this property of the blood becomes evident only after extremely large doses of serum have been administered. The solution of the problem why such large doses of serum are required in the seriously ill patients was made possible by the discovery by Dochez and Avery of the so-called soluble specific substance of pneumococcus. This substance is able to neutralize the immune substances of the serum, and experiments on animals and studies in patients indicate that when the infection is severe, or has been prolonged, these neutralizing substances accumulate in the blood in very large amounts.

During the first few years of our studies on the treatment of pneumonia by immune serum, reports of our results were made from time to time and a few other observers began to undertake this method of treatment. Although some of the results reported were at least hopeful, other observers decided that the method was of little or no value. Especially a report of Locke [3] from the Boston City Hospital, in which the literature on the subject was reviewed, raised serious doubts in the minds of many. In Locke's own series of 145 type I patients treated with serum, twenty-five died, a mortality rate of 17.2 per cent, while of seventy-one patients not treated with serum twelve died, practically the same mortality rate (16.9 per cent). Locke concluded that probably the serum, if valuable at all, is useful only if given within the first three days of the disease. Locke further decided that the mortality in type I cases was probably lower than had previously been thought. In our earliest papers we had considered the mortality in type I cases to be probably about 25 per cent. This of course was based on a limited number of cases. In the light of his own statistics and of those collected from the literature, Locke stated that he believed that the general mortality rate for type I pneumonia is not far from 20 per cent. Since Locke's paper appeared two reports have been made of fairly large series of typed cases, untreated with serum. In 352 untreated type I cases reported by Cecil, Baldwin and Larsen,[4] the mortality was 20.7 per cent. Park, Bullowa and Rosenblüth,[5] however, in their study of pneumonia at the Bellevue, Harlem and New York hospitals, in 249 untreated type I cases found the mortality to be 33 per cent. It is probable that the figures are bound to differ to a considerable extent in different hospitals and even in two series made from alternate cases in the same hospital. The surprising thing is that the statistical results are as constant as they are.

In the Hospital of the Rockefeller Institute we have employed serum treatment in type I pneumonia regularly since it was undertaken in 1913. The method has been to determine the type of infecting organism as soon as possible after the patient is admitted to the hospital and in all type I cases to undertake serum treatment at once. Every patient in whom this diagnosis has been made has received serum, with the following exceptions: fiirst, children in the first and second decades who have been admitted late during the course of the disease and in whom the prognosis was obviously very good; second, a small number of older patients who have been admitted late in the disease when the temperature was falling and who were apparently on the way to recovery before the determination of the type of infecting organism could be made; and, third, five patients who were moribund at the time of admission and who died before the type could be determined and serum given. With these exceptions, all type I cases admitted have been actively treated with large doses of serum repeated every eight hours.

3. Locke, E. A.: The Treatment of Type I Pneumococcus Lobar Pneumonia with Specific Serum, J. A. M. A. **80**: 1507 (May 26) 1923.

4. Cecil, R. L.; Baldwin, H. S., and Larsen, N. P.: Lobar Pneumonia, Clinical and Bacteriologic Study of Two Thousand Typed Cases, Arch. Int. Med. **40**: 253 (Sept.) 1927.

5. Park, W. H.; Bullowa, J. G. M., and Rosenblüth, M. B.: Treatment of Lobar Pneumonia with Refined Specific Antibacterial Serum, J. A. M. A. **91**: 1503 (Nov. 17) 1928.

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Since this form of treatment was commenced in 1913, there have been admitted to the Hospital of the Rockefeller Institute 1,256 cases of lobar pneumonia, and of these 431 were definitely determined to be due to type I pneumococci. Forty-four of the 431 patients have died, a mortality rate of 10.2 per cent. It seems proper to include in these statistics all type I cases, whether serum was given or not, since in any other similar group of patients there would also be a number to whom, for the same or analogous reasons, no serum would be given. However, if all the cases in which serum was not given are omitted, the mortality rate is not materially altered. Three hundred and seventy-one patients received serum and thirty-nine died, a mortality rate of 10.5 per cent.

I have earnestly sought to discover, if possible, whether any factors other than the administration of serum might have been responsible for the low mortality rate in our group of cases.

It is possible that the outcome in any case of pneumonia may be influenced to some extent by the time elapsing between the onset of the disease and the day of admission to the hospital. It has been found on analysis of our cases that 30 per cent of the patients were admitted on the fourth day of the disease or later, so that it is not likely that early admission to the hospital was responsible for the comparatively small number of deaths.

In Locke's paper, previously mentioned, attention was rightly drawn to the fact that the mortality rate in patients with lobar pneumonia increases with increasing years and is much lower in the early decades. This is strikingly brought out in Cecil's study of 2,000 cases of pneumonia in the Bellevue Hospital. In his experience, however, this difference in mortality at different ages is much less striking in type I cases than in cases associated with pneumococci of the other types. However this may be, if, in the present series, all patients under 25 are omitted, the mortality rate is not greatly changed; it becomes 13.7 per cent.

Finally it might be possible that the cases in this series were of less than average severity. In our experience it is difficult in the early stages of the disease to draw conclusions regarding the probable outcome in any individual patient. The most important prognostic feature in our opinion is the presence or absence of invasion of the blood by the pneumococci. The fact that in 32 per cent of our cases cultures of the blood were positive before serum was given indicates that the cases were at least of average severity.

It is, of course, possible that still other factors of which we have no knowledge may have been operative in lowering our mortality rate. Certain other therapeutic measures, such as improved methods of treating cardiac irregularities and the use of the oxygen chamber, are undoubtedly employed advantageously in the treatment of patients in the Rockefeller Institute Hospital, but if the employment of these measures was important in lowering the mortality rate in type I pneumonia it should also be manifest in the mortality rates in cases due to the other types of pneumococci. However, the mortality rate in all the other cases of lobar pneumonia, omitting those of type I, was 25 per cent. In the type II cases the rate was 27.6 per cent, in the type III cases 41 per cent, and in the cases due to pneumococci belonging in group IV 12 per cent. It seems probable, therefore, that the low mortality rate in our series of type I cases is related chiefly to the fact that the patients received active treatment with immune serum.

On the other hand, the question arises, Why have the results of serum treatment obtained in the Hospital of the Rockefeller Institute been better than those observed elsewhere? It is, of course, impossible to answer this question categorically. From the very first inception of this mode of treatment, we have held that the serum treatment is likely to be of greater value the earlier it can be undertaken, though we have not felt, with Locke, that this treatment was of value only if undertaken within the first three days of the onset. An analysis of our cases has shown that the average time of beginning treatment, in the patients that recovered, was 4.2 days after the onset, and in the fatal cases 5.2 days after the onset. Although the treatment was commenced early, on the first or second day, in a considerable number of cases, and it is in these cases that the effect of the serum is most apparent, it seems that early treatment cannot be the only factor concerned in the results obtained. More likely the following considerations are of importance:

First, good serum was employed. In the earlier years the serum we used was made under our direction at the Rockefeller Institute in New York and later at the department of animal pathology of the Rockefeller Institute at Princeton. During more recent years all the serum used has been supplied by the laboratory of the New York State Department of Health and has been made under the direction of Dr. Wadsworth. Frequent tests have shown this serum to be of uniformly high titer.

Second, large amounts of serum have been used. The average amount used per patient has been 420 cc. Since a considerable number of patients received only two or three doses, it is obvious that many patients received much more than the average amount. Indeed, one patient received as much as 2,000 cc. of serum. When immediate results were not obtained, the use of the serum was persisted in.

Third, the physicians having charge of pneumonia patients have, if necessary, been on duty twenty-four hours a day in order that no delay might occur in the determination of the type of infecting organism and that the serum might be administered promptly. Even under these conditions it is not felt that the treatment in all instances has been as efficiently carried out as one might desire, but on the whole it has been well done.

A special study has been made of the thirty-nine serum treated cases which ended in death to determine whether or not the treatment was efficiently carried out in all instances or if in any case there existed special conditions to which the failure of the serum might possibly be ascribed.

It was stated by Osler that "pneumonia is a disease with few complications and still fewer sequelae." Nevertheless the complications that do occur are of great significance as concerns the outcome. For the greater part they comprise suppurative focal lesions. In certain situations, as in the heart valves, the meninges or the pleura, the pneumococci are more or less inaccessible to the immune substances of the blood. Consequently in cases in which localized infection in these situations exist treatment with immune serum can exert little effect on the outcome, and probably no form of general specific treatment can be devised which will be effective under these circumstances.

Among our thirty-nine fatal cases there were five cases of meningitis. It was impossible to determine accurately in these cases the exact time of onset of the meningeal involvement. In none of them was the diagnosis of meningitis made before the serum treatment was commenced, but in at least three the histories indicate that involvement of the meninges had already occurred. In two of these cases the blood invasion at the time of admission was of extreme degree.

In five of the fatal cases, empyema was present. Two of these patients died following operations performed in other hospitals to which they had been transferred. One of these patients, admitted on the fifth day, was severely infected, 2,200 colonies developing from 1 cc. of blood. Following intensive serum treatment, the blood culture became negative. Nevertheless empyema developed, and on the twenty-second day of the disease the patient was transferred to another hospital for operation. Three days following the operation he died. Another of these patients was admitted on the fifth day. The blood culture was positive and did not become sterile until four doses of serum had been administered. His temperature became lower and his condition much improved, so that on the seventh day the administration of serum was discontinued. On the eighth day, although the patient's condition was very good, there appeared signs of fluid in the right pleural cavity and its presence was confirmed by exploratory puncture. The fluid was turbid and contained pneumococci, but it was not very purulent and it was decided to try the effect of treatment by repeated aspirations and injections of serum. But after forty-eight hours' trial of this method it was considered advisable to transfer the patient to another hospital for operation. Here, since the patient's condition was so good, it was decided not to operate until the fluid became more purulent. However, after three days a pericardial friction rub developed; thoracotomy was then performed and the empyema cavity drained. During the three days following it became evident that the pericardial exudate was increasing in amount and on the third day after the first operation the pericardium was drained through the left anterior chest wall. Following this operation the patient improved but died six weeks later.

The other three patients with empyema were not operated on. In one of them serum treatment was commenced four hours after admission, which was on the fourth day of the disease. The blood culture was positive on admission but became negative after serum treatment. On the seventh day his condition was so much improved that serum treatment was discontinued. His condition, however, gradually became worse and serum treatment was again undertaken on the ninth day, beginning with very small doses. The patient died on the twelfth day. The presence of some suppurative focus had been suspected and two exploratory punctures of the chest had been made but with negative results. At autopsy the presence of empyema and of an abscess in the anterior mediastinum was discovered. Another of these patients was very ill when she was admitted, on the third day, and cultures from 1 cc. of blood yielded colonies too numerous to count. Serum treatment was commenced on the fourth day but was very irregularly carried out. The blood culture, in spite of treatment, remained positive, but the number of colonies dropped to one per cubic centimeter. The patient died on the eleventh day. No autopsy was obtained but puncture of the left pleura post mortem showed the presence of a purulent exudate. In this case the fatal outcome may have been related to the failure to make a diagnosis of the empyema. The other patient with empyema was a marked alcoholic addict who had been ambulatory until the time of admission, on the fourth day of the disease. He was very ill when admitted and his blood culture yielded 100 colonies per cubic centimeter. After admission he developed delirum tremens. He received only two doses of serum on the fifth day. The presence of fluid in his chest was diagnosed and 400 cc. of turbid infected fluid was removed by aspiration. It was not thought advisable to operate at once and he died on the following, the sixth, day.

Besides the case of pericarditis with empyema previously mentioned there occurred among the fatal cases one other case of pericarditis. This patient was only admitted on the eighth day and was fairly well treated but in spite of repeated doses of serum the blood culture remained positive. The presence of pericarditis was suspected but not definitely diagnosed until after death, which occurred on the eleventh day, when the pericardium was punctured and the presence of a large amount of turbid fluid was demonstrated. No autopsy was obtained.

One of the patients suffered from a chronic endocarditis and at autopsy fresh vegetations were present on the mitral valve. There was a second patient in whose heart at autopsy a small vegetation on the mitral valve was present. This patient also had a chronic tuberculous focus and the autopsy disclosed the presence of acute miliary tuberculosis as well as acute lobar pneumonia. The blood culture, which on admission showed the presence of pneumococci, became sterile after the administration of one dose of serum.

In two cases death occurred suddenly and was apparently associated with severe myocarditis. One of these patients was a man, aged 69, who was hemiplegic. Auricular fibrillation was present when he was admitted on the sixth day of the pneumonia. Following the administration of serum his condition improved, so far as the pneumonia was concerned, but he continued to have auricular fibrillation and flutter. He was so much better that the administration of serum was discontinued, but on the tenth day he suddenly sat up, attempted to swing himself out of bed, uttered a cry, and died. In this case acute cardiac dilatation, or possibly embolism, seemed to be the immediate cause of death. There was no autopsy. A somewhat similar case was that of a man, aged 73, who died suddenly on the fourth day. He had received two doses of serum and died two hours after the second dose. The character of the exitus did not suggest that it was related to the administration of serum.

Two of the patients died long after the acute pneumonic symptoms had passed, with streptococcus septicemia. One of these patients died on the twentieth day, the other on the fifty-fourth day after the onset of the pneumonia. One patient died suddenly during convalescence, on the sixteenth day, from pulmonary embolism, the lesion being demonstrated at autopsy. Another patient died on the thirty-third day during a postpneumonic psychosis. No autopsy was obtained but there were no signs during life of any suppurative focus. The blood culture, which was positive on admission, had become negative following serum treatment.

Among the fatal cases, therefore, there were nineteen in which the fatal outcome was apparently related to some complication. Such complications will occur in

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any similar group of cases and it is not to be expected that the administration of serum, at any rate if it is given late, will have any effect on the outcome. I have, myself, previously suggested that complications may indeed occur more frequently in the serum treated cases than in those not so treated, since life may be prolonged and the opportunity for the development of complications may thereby be made greater. This statement, however, was based on theoretical considerations and our own statistics do not, as yet, lend strong support to this view.

In the remaining twenty of our thirty-nine fatal cases the outcome was clearly the result of the pneumonic process and therefore the serum should theoretically have been beneficial. In four of these cases, however, the patients were admitted in a very critical condition, on the fourth, fifth, sixth and ninth days, respectively; they received only one or two doses of serum and died soon after admission. Two of the patients were treated in 1913 when the management of cardiac irregularities was not as well understood as at present. Both of these patients had auricular fibrillation and received intravenous injections of strophanthin, a method of treatment now considered dangerous. Death in both of these cases seemed to be associated with the cardiac disturbance. It is possible that death in one patient was due to anaphylaxis or, at any rate, related in some way to the administration of serum, though the evidence for this is not convincing. This patient, aged 35, was admitted on the seventh day, with involvement of the right upper and lower lobes; the blood culture was positive but she did not appear desperately ill. Skin tests for serum sensitiveness were negative. Ten hours after admission, 80 cc. of serum was slowly administered, without any immediate reaction. One hour later there occurred a moderate chill and the patient became very delirious. She became pale and perspired. Following the administration of morphine she became quiet but died one hour later without any great respiratory distress. No autopsy could be obtained. If this was an anaphylactic reaction it was of a very unusual type.

In the remaining thirteen patients, although considerable amounts were administered, the serum seemed to have little or no effect, either beneficial or otherwise. In certain of these cases, however, the treatment was obviously not carried out in a thoroughly satisfactory manner. Most of the patients were very ill on admission. In all but one the blood culture was positive before treatment was undertaken and in most cases the bacterial invasion was of high degree. In one case the blood culture showed 300 colonies per cubic centimeter, in another 200 colonies, and in still another 175 colonies. In all cases in which repeated cultures were made after the serum treatment was undertaken the degree of invasion of the blood became markedly less, but in three cases the blood never became sterile. Treatment was commenced on the second day in two cases, on the third day in one, on the fourth day in four, on the fifth day in three, and in three cases on the sixth, seventh and tenth days, respectively. In most of these cases it is impossible to find any reason why the serum failed to be effective, but a brief summary of the histories of these thirteen patients is of interest.

Patient 1 was admitted on the fourth day. He received only two doses of serum and died on the fifth day. The serum seemed to have little effect. At autopsy bilateral pneumonia was found, but there were no suppurative foci.

Patient 2 was admitted on the sixth day with a severe blood infection, 300 colonies per cubic centimeter. Treatment was commenced four hours after admission and was well carried out. After two doses of serum the blood culture became sterile. He received a total of 1,655 cc. of serum. In spite of this he gradually grew worse and died on the twelfth day. There was no autopsy.

Patient 3 was admitted on the third day, but a delay occurred in diagnosing the type of infecting organism and serum treatment was only commenced on the fifth day. He received 500 cc. of serum in a period of a little over forty-eight hours but died on the seventh day. At autopsy a very extensive pneumonia was found. It was estimated that from 75 to 80 per cent of the entire lung tissue was involved.

Patient 4 was admitted on the third day; the blood culture showed only two colonies per cubic centimeter. Treatment was undertaken ten hours after admission. Only four doses were given, however, and as no improvement was noted the physician in charge discontinued the serum. The patient lived until the seventh day. During the course of the disease there was a very low urinary output and the kidney complication may have been, in part, responsible for the outcome. Moreover, cultures from the lung post mortem showed the presence of staphylococci as well as pneumococci. Autopsy was not performed.

Patient 5 was admitted on the fourth day and received three doses (290 cc.) of serum, dying on the morning of the sixth day. He was not very actively treated but he did not show any effect from the serum he received. Autopsy showed an extensive pneumonia involving, in part, all lobes of both lungs.

Patient 6 was an obese woman, aged 64, admitted on the second day. She received only two doses of serum and died on the fourth day. At autopsy both lungs showed a widespread pneumonic process, and in addition the lesions of chronic glomerular nephritis were present. The patient was inefficiently treated but the serum did not have any apparent effect except on the blood culture, which was positive on admission and became negative after one dose of serum.

Patient 7 was markedly alcoholic and developed delirium tremens following the onset of the pneumonia. He was admitted on the sixth day and was treated on the seventh, eighth and ninth days, receiving 700 cc. of serum and dying twenty-four hours after the last dose. The autopsy showed an extensive bilateral pneumonia but no complications.

Patient 8 was also an alcoholic addict. He was admitted on the second day but already appeared very ill. The treatment was commenced on the third day and he received 700 cc. of serum in forty-eight hours. He died on the fifth day. The autopsy also showed an extensive bilateral involvement of the lungs but no complications.

Patient 9 was admitted on the fourth day. Treatment was commenced on the fifth day. He received 1,000 cc. of serum but the treatment was discontinued thirty-six hours before death. He died on the tenth day. Autopsy was not performed.

Patient 10 was admitted on the second day; he was very acutely ill. Serum treatment was commenced four hours after admission. Blood cultures yielded seventy-five colonies per cubic centimeter, but after two doses the cultures showed only one colony per cubic centimeter. The patient was treated actively and received 800 cc. of serum. He died on the fifth day. Autopsy was not performed.

Patient 11, a woman, aged 30, was admitted on the fourth day. She was very poorly nourished. The blood culture showed 200 colonies per cubic centimeter. After two doses of serum the blood culture became negative, but later repeated cultures always showed a few colonies. Twenty-four hours before death there were twenty colonies per cubic centimeter. She was not actively treated at the start but received a total of 1,600 cc. of serum. She died on the twelfth day. The behavior of the blood culture suggested the presence of some suppurative focus, but at autopsy only a massive consolidation involving both lungs was found.

Patient 12, admitted on the fifth day, was very ill but the blood culture was negative. An error was made in typing from the sputum and it was not until the blood culture became positive on the eighth day that the infecting pneumococcus was found to be type I. On the ninth day he appeared better and

no serum was given, but on the tenth day he was much worse and 400 cc. of serum was administered. The following day he was better and serum was not given, but on the twelfth day he was again much worse and two more doses of serum were given. He died on the evening of the twelfth day. In this case before death there was a suspicion of meningitis, but permission for autopsy could not be obtained.

Patient 13, a man, aged 54, admitted on the third day, was extremely ill. The pulse was very irregular and auricular fibrillation was found to be present. Owing to a mistake in diagnosis, the organism was first thought to be of group IV and no serum was given for thirty-six hours after admission. The proper diagnosis was not made until the fourth day and two doses of serum were then given. His condition was considered desperate and no further serum was administered, though he lived for about twenty-four hours. The auricular fibrillation was not controlled and lasted until death occurred on the fifth day. The blood culture was sterile on admission but became positive before serum was administered and remained positive after the administration of the serum. Autopsy was not performed.

It is evident that in a number of the cases just described the treatment was irregularly and inefficiently administered. In cases, such as 2, 7 and 12, when the serum treatment was commenced very late, it could hardly be expected to be effective. In other cases, however, especially in cases 8 and 10, no reason can be assigned for the failure of the serum.

In spite of these failures, the review of the fatal cases indicates how difficult it will be to improve the present method so as to reduce the mortality rate below that of 10 per cent which was obtained in our series. Moreover, if the serum did not have any effect in this series, not much can be hoped for from other forms of specific therapy. It is obvious that many patients with pneumonia who die do not die of pneumonia, and that the proper treatment of complications is of great importance. The cases of pneumococcus meningitis with recovery recently reported by Harkavy [6] and by Globus and Kasanin [7] hold forth promise that in the future certain patients with meningitis may be saved. Early diagnosis and prompt and proper treatment of empyema might possibly have saved one or more of our patients. The treatment of cardiac irregularities has greatly improved in recent years and it is possible that several of our earlier patients if admitted now would recover. It is possible that the treatment of patients showing severe cyanosis in chambers in which the atmosphere contains an increased proportion of oxygen may be life saving. Most of our cases of this character admitted since 1921, including ten of the sixteen fatal type I cases, have been so treated for longer or shorter periods. The results as regards the saving of life have not been striking, but it is possible that, if this method had been available, one or more of our earlier patients might have recovered. More prompt diagnosis of the type of infection and earlier and more regular and persistent administration of serum might have saved a few others. While a further marked lowering of the mortality rate, therefore, can hardly be hoped for it is possible that, even with present knowledge, some reduction may be achieved.

It is not to be assumed, moreover, that no further improvements can be made in the preparation or administration of antipneumococcus serum. The difficulties and expense involved in employing the large amounts of serum that are required are obvious. The not infrequent occurrence of serum sickness is a disagreeable, though not necessarily serious, objection to its employment. This was recognized soon after the commencement of our studies and efforts were made to find methods to reduce the amount of serum which it is necessary to administer in each case. Investigations were undertaken by Avery to determine in which fraction of the serum the effective substances were contained, and the results of this investigation were published in 1915. By fractional precipitation of the proteins with ammonium sulphate he was able to eliminate a large amount of the inactive protein in the serum and thereby to produce a so-called concentrated serum. However, in view of the unavoidable loss of antibody and of the difficulties of preventing bacterial contamination during the necessary manipulations, it was not believed that the method was suitable for general use. Another method of purification was then attempted; namely, the concentration of the serum by means of specific precipitation. Gay and Chickering, also in 1915, described a method for doing this. Again, however, it was not thought that the method was practical for use on a large scale. Huntoon, however, in 1920 and 1921 concentrated large amounts of serum by a modification of the Gay-Chickering method, and this product received an extensive clinical trial in this and succeeding years. The serum concentrated by this method was found to produce violent reactions, the clinical results were not encouraging, and I think this method is no longer being used.

In 1915 Avery had shown, by dialysis of the serum through a parchment membrane, that at least a part of the active substances was contained in the water insoluble globulin. In 1924 Felton employed another and a much simpler method for separating this active globulin; namely, by dilution of the serum in a large amount of water. It seemed that a distinct advance had been made in the method for concentrating antipneumococcus serum. This method, or modifications of it, has now been used in concentrating large amounts of serum and the product has received an extensive clinical test by Park and his associates and by Cecil. That the method of Felton is not ideal, however, is shown by the most recent report of Felton,[8] in which it is stated that the method of fractional salt precipitation is again being used, employing, however, anhydrous sodium sulphate, instead of ammonium sulphate, as a precipitating agent.

With all methods for concentrating serum, the degree of concentration obtained differs for every lot of serum. In order to use these products, therefore, it is necessary that they be accurately tested for their effective strength. In using whole serum we have maintained that every lot of serum employed must meet the most rigorous test possible; namely, that 0.1 or 0.2 cc. of the serum shall protect a mouse against 0.1 cc. of a culture of the highest virulence. This approaches closely the largest dose of culture against which any amount of serum, however large, will protect, and the test, therefore, has seemed to be the most exacting one that could be used.

It would seem that the simplest and most satisfactory way to test the concentrated serum would be to make various dilutions and test them in the same manner that the whole serum is tested. For instance, if with a concentrated serum diluted once with water the same

6. Harkavy, Joseph: Pneumococcus Meningitis: Recovery with Serum Therapy, J. A. M. A. **90**: 592 (Feb. 25) 1928.

7. Globus, J. H., and Kasanin, J. L.: Pneumococcus Meningitis Treated by Forced Subarachnoid Drainage, J. A. M. A. **90**: 599 (Feb. 25) 1928.

8. Felton, L. D.: Concentration of Pneumococcus Antibody, J. Infect. Dis. **43**: 543 (Dec.) 1928.

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degree of protection were obtained as with whole serum, one would be safe in saying that the concentrated serum is twice as effective as the whole serum and the dosage could be one-half as large. It has been found, however, that this method cannot be employed with concentrated serum since, when large doses of cultures are employed, the concentrated serum not only does not protect any better than the whole serum but even has less protective power. A method of testing has therefore been devised by Felton in which smaller doses of culture are employed. The method is patterned after the method used for testing antitoxic serums and is based on the assumption that, as regards protective action, the relation of the amount of serum to the size of the inoculum obeys the law of multiple proportions. This, however, was long ago shown by Dochez to hold true, at least as regards antipneumococcus serum, only within very narrow limits.

Various definitions of the unit as employed by Felton and his co-workers have been given, but in his most recent communication Felton [9] states that the unit is "that amount of antibody or serum that will protect against 1,000,000 minimal lethal doses of virulent pneumococci." The concentrated serum employed by Park and his associates is said to contain from 1,000 to 3,000 units per cubic centimeter. The dosage recommended by Park and Cooper [10] is 10,000 units on admission to the hospital, and a similar amount every eight to twelve hours as long as the temperature remains high or bacteremia persists. Doses of 5 to 10 cc. of the concentrated serum are therefore considered sufficient.

That errors are inherent in this method of testing is shown by the fact that various lots of the whole serum used by us, when tested with the greatest care by the method described by Felton, have been found to contain 2,000 units. If the standard of dosage recommended by Park should be employed, we should need to give doses of only 5 cc. of this serum. In the light of all our experimental and clinical studies, this amount of serum would be entirely inadequate.

In the most recent report of Park, Bullowa and Rosenblüth [5] in a group of 266 type I cases in the Bellevue, Harlem and New York hospitals, treated with concentrated serum, the mortality rate was 19 per cent, while in 249 cases not treated with serum the mortality rate was 33 per cent.

While a method of concentrating the serum which would permit smaller dosage would mark a distinct step forward in the serum treatment of pneumonia, it is of great importance that extreme care be taken to make sure that the smaller doses employed have a protective value at least as high as that of the larger doses of whole serum. Even with very large amounts of serum it is difficult enough to obtain significant results. Insufficiently intensive treatment may discredit a therapeutic measure that is apparently of value.

SUMMARY

The evidence based on experimental studies, that immune horse serum should be useful in the treatment of pneumonia due to pneumococcus type I, is supported by the clinical experience of the Hospital of the Rockefeller Institute in which, of 431 patients, only forty-four died. A review of the fatal cases indicates that if serum therapy was not effective in this group of cases no other form of specific treatment would likely be of much greater value. It is possible that more prompt diagnosis of the type of infecting organism and more regular and persistent administration of serum might have saved a few more patients.

The present method of treatment with large doses of serum is not ideal. Various methods have been used to concentrate the immune substances contained in the serum. With concentrated serums, accurate methods of standardization are demanded. The methods now being used present certain difficulties, and it is seriously questioned whether by these methods a picture of the actual effectiveness of the product can be obtained. It is doubtful whether the small doses of concentrated serum which have been recommended can have any effect on the mortality from pneumonia. Unless very large doses of concentrated serum are employed, or unless some more accurate method of standardization is adopted, it is better to continue to treat cases of type I pneumonia with good, whole serum in large doses.

Sixty-Sixth Street and Avenue A.

9. Felton, L. D.: The Units of Protective Antibody in Antipneumococcus Serum and Antibody Solution, J. Infect. Dis. **43**: 531 (Dec.) 1928.

10. Park, W. H., and Cooper, Georgia: Antipneumococcus Serum in Lobar Pneumonia, J. A. M. A. **90**: 1349 (April 28) 1928.

DESICCATED STOMACH IN THE TREATMENT OF PERNICIOUS ANEMIA *

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After the discovery by Minot and Murphy [1] of the beneficial effects of liver therapy in pernicious anemia and the preparation of an active extract by Cohn and his associates,[2] the way for further study was opened by the demonstration by Castle [3] that the stomach of normal persons secreted a substance which could develop a blood-maturing principle from meat. After a consideration of these investigations, it seemed advisable to us to test the activity of gastric tissue itself. Work was started at the Simpson Memorial Institute on the nature of the material in stomach which could produce a hematopoietically active substance, but the experiments were later carried on with the association of Dr. Elwood A. Sharp, director of the department of experimental medicine of Parke, Davis and Company. Dr. Sharp, working on the basis of an original theory, concluded that the feeding of stomach should have the same effect on patients with pernicious anemia as liver. The work of both laboratories was then centralized and the experimental material tested under controlled conditions. The preparation used was made by desiccating fresh whole hog stomach so that 30 Gm. of the dried substance represented 190 Gm. of the fresh tissue. In later material the fat from the preparation was removed by petroleum benzin, so that 30 Gm. of the final material represented 218 Gm. of the fresh tissue. The resultant product was a great improvement, as it had very little

* From the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan.

1. Minot, G. R., and Murphy, W. P.: Treatment of Pernicious Anemia by a Special Diet, J. A. M. A. **87**: 470 (Aug. 14) 1926.

2. Cohn, E. J.; Minot, G. R.; Fulton, J. J.; Ulrichs, H. F.; Sargent, F. C.; Weare, J. H., and Murphy, W. P.: The Nature of the Material in Liver Effective in Pernicious Anemia, J. Biol. Chem. **74**: lxix (July) 1927. Cohn, E. J.; Minot, G. R.; Alles, G. A., and Salter, W. T.: The Nature of the Material in Liver Effective in Pernicious Anemia, ibid. **77**: 325 (May) 1928.

3. Minot, G. R.: Presentation of Kober Medal, J. A. M. A. **93**: 64 (July 6) 1929. Castle, W. B.: Achlorhydria and Pernicious Anemia, Brit. M. J. **1**: 1120 (June) 1929.

odor and practically no taste. All material was prepared for us by Parke, Davis and Company.

Daily feedings of from 15 to 30 Gm. of this residue in suspension in water were given to three consecutive patients with typical pernicious anemia. In all three there was a prompt and very active response characterized by an increase in the percentage of reticulated red blood cells, which was at least comparable with, if not greater than, the increase in the reticulocyte percentage induced by feeding an active commercial extract made from 300 to 600 Gm. of fresh liver.

REPORT OF CASES

CASE 1.—F. J. W., a man, aged 57, had been treated with a preparation of liver extract about two years previously, receiving six vials daily, representing the extract from 600 Gm. of fresh liver. At that time his initial red blood cell count varied between 890,000 and 1,000,000 per cubic millimeter, and his maximum reticulocyte count was 16 per cent on the tenth day of treatment. He developed a complete and perfect remission but later discontinued the medication and had a complete relapse. With 30 Gm. of dried hog's stomach, an initial red blood cell count of 1,120,000 per cubic millimeter, and a hemoglobin of 29 per cent (Sahli), the maximum rise in the percentage of reticulated red blood cells was 18.8 per cent on the seventh day. Details of the blood changes are shown in the accompanying table and in chart 1. The patient was fed 30 Gm. daily of desiccated whole stomach from the first to the twentieth day; from then on he was given 15 Gm. of the substance daily. He was not given any hydrochloric acid with his meals. Daily counts of the reticulocytes after the twenty-fourth day showed a variation of from 0.1 to 1.1 per cent. On the forty-sixth day the red blood cell count had risen to 4,430,000 per cubic millimeter, the hemoglobin to 76 per cent (Sahli). The white blood cells had increased from 2,400 to 5,400 per cubic millimeter. There was a marked subjective and objective improvement, which began early in the course of the treatment.

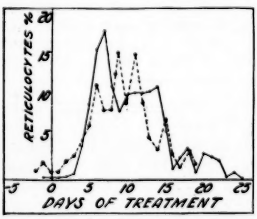

Chart 1.—Reticulocyte percentages after liver extract feeding (broken line) and desiccated stomach feeding (solid line) in the same patient (F. J. W.) during two relapses.

CASE 2.—P. H., a man, aged 74, with an initial red blood cell count of 730,000 per cubic millimeter, a white blood cell count of 2,100 per cubic millimeter, and a hemoglobin of 19 per cent (Sahli), was given 30 Gm. of the dried stomach daily and was under observation for a total of fourteen days. The patient did not receive hydrochloric acid with his meals. As shown in the accompanying table, the reticulated red blood cells increased to a maximum of 14.9 per cent on the seventh day of treatment. Twelve days after the first dose was given his red blood cell count had risen to 1,370,000 per cubic millimeter, the white blood cells were 2,800 and the hemoglobin was 28 per cent (Sahli). At this time the patient felt greatly improved and left the hospital. Further observation, therefore, was not possible.

CASE 3.—R. S., a man, aged 26, with an initial red blood cell count of 1,470,000 per cubic millimeter, a white blood cell count of 4,500 and a hemoglobin of 35 per cent (Sahli), was given daily doses of 30 Gm. of the dried stomach which had been defatted with petroleum benzin. In addition, the patient received 4 cc. of dilute hydrochloric acid in 250 cc. of water with each meal, but this was not administered at the same hours that the desiccated stomach was given. There was a very rapid and remarkable improvement similar to that observed in patients with pernicious anemia following the use of liver (chart 2). In nineteen days the red blood cell count rose to 3,240,000 per cubic millimeter, the white blood cells were 4,300 per cubic millimeter, and the hemoglobin was 66 per cent (Sahli). It may be noted that these patients had not had liver or liver extract for two months or longer before the treatment with desiccated stomach was started.

COMMENT

The observation that the feeding of desiccated whole hog's stomach produces a complete remission in pernicious anemia supplements and substantiates the work of Castle, since it indicates that stomach tissue contains a red blood cell maturing substance. The question of the origin of the active principle in the desiccated stomach is now being tested experimentally. Several possibilities may be considered. One is the presence of an enzyme or similar substance which may act on the protein present in the stomach tissue during the period that elapses after the organ is removed from the animal and before it is dried. This would be in accord with Castle's experiments. Another possibility is that there may be a supply of the active hematopoietic principle itself present in the stomach wall, as it apparently is in liver and kidney. Experiments are now in progress to determine whether the mucosa or the muscle layer of the stomach or both contain the red blood cell

Reticulocyte Percentages after the Feeding of Desiccated Whole Stomach to Patients with Pernicious Anemia *

Days After Initial Dose	Percentage of Reticulocytes		
	F. J. W.	P. H.	R. S.
1	0.2	1.5	6.0
2	0.3	1.9	1.5
3	0.6	3.5	3.3
4	4.2	9.6	5.2
5	9.5	10.8	13.4
6	16.5	12.0	25.3
7	18.8	14.9	19.2
8	11.7	13.9	16.6
9	8.6	8.1	11.1
10	10.7	9.6	15.4
11	11.0	7.5	15.0
12	11.0	6.5	11.3
13	11.2	11.8	6.0
14	11.7	....	4.3
15	6.1	....	3.6
16	1.3	....	1.9
17	2.7	....	3.2
18	4.0	....	2.8
19	1.9	....	1.1
20	3.2	....	....
21	2.7	....	....
22	2.3	....	....
23	0.3	....	....
24	1.9	....	....

* The figures for control periods before medication was started are omitted from the table. They varied from 0.1 to 2 per cent.

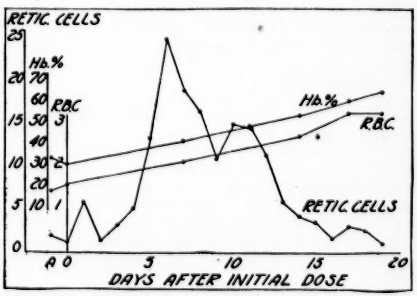

Chart 2.—Reticulocyte, red blood cell and hemoglobin changes in a patient (R. S.) with pernicious anemia following feeding of desiccated stomach.

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maturing substance which is active in patients with pernicious anemia. The observations so far are in accord with the idea that patients with pernicious anemia evidently have lost, or have never had, the ability to secrete a substance in their stomachs which has the power to produce a blood-maturing material from food.

From the limited amount of available data, it is suggested that stomach tissue, per gram of fresh material, is more active than liver, as a smaller amount of the former is required to induce a remission in a patient with pernicious anemia. It is interesting to note that stomach tissue and liver are both active as a red blood cell maturing agent in patients with pernicious anemia, in the absence of "free" hydrochloric acid.

CONCLUSION

Whole desiccated hog stomach and hog stomach defatted with petroleum benzin produce a satisfactory hematopoietic remission in pernicious anemia.

AN ANTIANEMIC FACTOR IN DESICCATED STOMACH *

ELWOOD A. SHARP, M.D.
DETROIT

Liver and liver extracts have proved to be specific in the treatment of pernicious anemia. The question of why they are effective cannot be answered. Tashiro [1] believes that an impaired liver function actuates primary anemia. Meinertz [2] regards the spleen as the cause of hemolysis with a coincident subnormal liver function in caring for the toxic products of amino-acid oxidation. Eleven years ago Mosenthal [3] raised the point that protein destruction plays a considerable rôle in the etiology of pernicious anemia. Means and Richardson [4] express the view that there is a shortage of a specific substance clearly responsible for the abnormalities in the bone marrow and the blood.

Koessler [5] and his co-workers have produced experimental anemia in animals with a blood picture similar to that of pernicious anemia by a diet deficient in vitamin A. They followed up this observation in human cases of the disease by giving diets high in vitamin content. Unfortunately, kidney and liver were included in the dietary. Goldberger's [6] early dictum that the quality and not the quantity of protein was a factor in the etiology and determined the usefulness of foodstuffs in the treatment of pellagra may guide observers to a similar end-point in the analysis of extensive investigative work resulting from the introduction of liver treatment.

The deficient element is apparently unrelated to fat digestion and assimilation, since all students of this disease have commented on the maintenance of weight and good assimilative ability of the organism during severe crises. Newham, Morris and Manson-Bahr [7] recently emphasized this salient feature as a valuable differential one in sprue, in which disorder one fourth of the food ingested may be excreted.

Normal gastric digestion has held the attention of physiologists for years. There is a large legacy of literature but a paucity of definite knowledge regarding the origin, action or chemical constitution of the components of gastric secretion.

Achylia gastrica is a persistent abnormality of pernicious anemia and it is probably an anomaly in the predisposed person, existing for several years prior to full development of the hematopoietic syndrome. These assertions cannot be substantiated incontrovertibly, but they must be taken seriously on account of the numerous reports of achlorhydria antedating a justifiable hematologic diagnosis of Addison's anemia. Cornell [8] observed a patient with achlorhydria and an associated anxiety neurosis for four years, who finally developed frank pernicious anemia. Castle [9] has commented on the appearance of achlorhydria due to known causes, followed by the typical disease. Johansen [10] and others have been unable to demonstrate hydrochloric acid in the gastric juice after many months of adequate liver therapy. Apparently the importance of achlorhydria in the etiology of pernicious anemia exceeds its present evaluation as a cardinal diagnostic point.

Is it possible to correlate persistent achylia gastrica, anemia and liver treatment? Castle [9] has submitted evidence to show that the required antianemic factor is obtained from beef by the action of normal gastric juice. It is conceivable that there is defective liver function as well as an abnormal gastric condition in the predisposed person. It appears more rational to assume that liver or liver extracts supply an essential substance, readily synthesized from ordinary food in normal gastric conditions, but imperfectly or scantily converted in achylous digestion.

On the basis of these criteria and the fact that the anlages of the stomach and liver are analogous in origin —being derived from the embryonic foregut—it was believed that stomach tissue might contain the same antianemic factor abundant in liver. Moreover, if achylia gastrica is caused by an acquired or congenital defect of the glandular portion of the gastric mucosa, it seemed reasonable to believe that tissues of the stomach might be therapeutically applicable from the standpoint of organ specificity. Consequently, a preparation of desiccated whole hog stomach has been subjected to limited clinical trials in pernicious anemia.[11] Tentatively, the conclusion is justified that it produces a symptomatic response as vigorous and effective as that obtained from liver or liver extract.

CONCLUSION

Desiccated whole hog stomach contains an antianemic factor, which leads to additional speculation as to the etiology of pernicious anemia.

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* From the Department of Experimental Medicine, Parke, Davis & Company.

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SLUDER'S NASAL GANGLION SYNDROME AND ITS RELATION TO INTERNAL MEDICINE *

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In 1908, the late Greenfield Sluder reported certain neuralgic symptoms that he thought were produced by lesions affecting the nasal ganglions (sphenopalatine, Meckel's). Later (1909, 1910, 1915), he reported motor, sensory, gustatory, ocular, respiratory and sympathetic phenomena (vasomotor and secretory). He stated that the symptoms were but little relieved by the usual analgesics but could be greatly relieved by cocaine anesthesia in the region of the ganglions. In 1918 Dr. Sluder presented these views in a monograph, "Concerning Some Eye Disorders of Nasal Origin," and in 1927 he gave a more matured account of the subject in his book on "Nasal Neurology, Headaches and Eye Disorders," [1] the part dealing with the nasal ganglions and their clinical relations filling fifty pages.

W. E. Casselberry referred to the subject in 1911, and Mink of Utrecht in 1915, but it was not until 1921 that reports by R. A. Barlow [2] of the Mayo Clinic and H. R. Etheridge [3] showed an active and productive interest which has continued to the present. For a time the subject did not excite the curiosity of the Old World, but it was then taken up with enthusiasm by French rhinologists, who have made interesting contributions, meeting not a little criticism from some of their compatriots. Belgian, Dutch and German rhinologists have also contributed to the anatomic and clinical problems involved, stimulated by what Goldschmidt-Osmund calls the "ausgezeichnete Beobachtungen" of Sluder. It is noteworthy that a large number of Dr. Sluder's assistants and associates published corroborative and amplifying evidence, but for a long time these contributions were not reflected in textbooks or in current literature, which often presents a distinct skepticism about or disregard of Sluder's work. April 3, 1925, there was a symposium on spasmodic coryza in the Section on Laryngology of the Royal Society of Medicine. None of the speakers referred to Sluder, though Neil Maclay had mentioned his work in an article [4] the year before. Harris H. Vail [5] shows that Sluder made solid contributions to the subject, and in the recent encyclopedic work of Jackson and Coates,[6] there is an adequate chapter by W. M. C. Bryan and Arthur M. Alden. Many patients with symptoms of the Sluder syndrome apply to general practitioners or internists because there is often nothing to suggest the need for a specialist. For this reason, and because of its general interest, I have thought it worth while to bring the subject before this section. The technical part will in most cases be carried out by specialists, but there is no reason why the primary diagnostic and therapeutic work should not be done by any physician who cultivates rhinologic technic. Hiram Byrd is justified in saying that the technic of cocainization of the nasal ganglion should be mastered by everyone who undertakes the practice of medicine, regardless of what his specialty may be, or whether he has a specialty. In order to realize the clinical interest of the subject, a fuller picture of the symptomatology is necessary.

NEURALGIC SYNDROME

There are many variations in the clinical picture. Many symptoms may be absent, or there may be only one, neuralgia, or a paresthesia. Sluder's earliest work emphasized especially pains in various parts of the head, such as behind the eyes, the root of the nose, the upper jaw, the hard palate, the soft palate, the teeth, temples, occipital region and neck. Earache may be present, referred to the mastoid region, with a tender point 5 cm. back of that. Not a few such patients have had mastoid operations, with negative results. While getting leukocyte counts and roentgenograms in such patients, a "switchboard test" would be useful. There may be pain in the shoulder and shoulder blade, less frequently in the axilla, and in severe attacks down the arm to the fingers. Certain eye symptoms were early reported; in fact, Sluder acknowledged his introduction to the subject by the late A. E. Ewing, who had Sluder relieve the pain of glaucoma by cocainization of the nasal ganglions. This has been confirmed by others. Epiphora, iritis, conjunctivitis, keratitis, ophthalmic herpes zoster, painful accommodation, and hyperesthesia of the ciliary muscle have been ascribed to nasal ganglion irritation and relieved by ganglion anesthesia. Neuralgias of every part of the head, including typical migraine, and of varied etiology, including syphilis and malaria, have been reported. Not infrequently the pain begins at the root of the nose and passes over the back of the head and down into the neck and shoulders. After the attack, sore spots may remain in the scalp. Vertigo and dizziness are sometimes present. Ear symptoms, such as stuffy feeling, itching, tinnitus and pain in the middle ear, may be present with disturbances of hearing. C. E. Cody had a case associated with mastoidalgia and torticollis. Various pains in the tongue, and disturbances of taste described as "bitter" or "bad," have been noted. Toothache is not uncommon, or a sensation as if the teeth were too high. Pain has been referred to the location of teeth that have been extracted long before, with no roentgen evidence of disease. Itching may be present in the mouth and increased salivary secretion may occur. Sluder reported spasm of the esophagus in a syphilitic woman relieved through the nasal ganglion.

SYMPATHETIC SYNDROME

As the sympathetic syndrome Sluder described various symptoms and symptom groups that occur with or without the neuralgic symptoms. Many cases belong to the class called nasal hydrorrhea, vasomotor rhinitis, hyperesthetic rhinitis, spasmodic rhinorrhea, spasmodic rhinitis, paroxysmal rhinorrhea, spasmodic coryza, rhinitis or coryza nervosa and other names. Sometimes the attack begins as an ordinary coryza with or without a known ethmoid or sphenoid infection; sometimes after exposure to chilling, dust, perfume or pollen. But sometimes it begins, in Sluder's words, "with explosive effect" without known cause. The patient is seized with sneezing, nasal obstruction and running of the nose, sometimes a veritable rhinorrhea. The secretion is sometimes described as hot, and sometimes it irritates the skin. The skin and mucous membrane of the nose are red and swollen; the mucosa is very sensitive to the

* Read before the Section on Practice of Medicine at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

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4. Maclay, Neil: Brit. M. J. **2**: 996 (Nov. 29) 1924.
5. Vail, H. H.: Vidian Neuralgia from Disease of the Sphenoid Sinus, Arch. Surg. **18**: 1247 (April) 1929.
6. Jackson, C., and Coates, G. M.: The Nose, Throat and Ear and Their Diseases, Philadelphia, W. B. Saunders Company, 1929.

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touch. The eyelids are swollen, the conjunctivae red. Photophobia and lacrimation are intense and may persist in complete darkness, little or not at all relieved by heat or cold, or boric solutions. Any use of the eyes is impossible at such times. Occasionally the eyes may be staring, and exophthalmos has been reported. Irritation of the larynx and bronchi may be present with asthmatic symptoms. Asthma occurs also with or without coryza. One of L. K. Gundrum's asthmatic patients had had symptoms for twenty years and was relieved by nasal ganglion anesthesia. The sympathetic syndrome obviously resembles hay-fever, and Barlow was quite correct in thinking that cases have been confused in practice, and they still are. Cases were also described as nonseasonal hay-fever. In all such cases the search for sensitization should be carried out. R. Meigeville says that in the sympathetic picture everything is variable, the mode of onset, the course and the duration, but with no general symptoms of infection, fever or chills. There are in truth such cases, and yet the sympathetic syndrome may occur in a case of infectious rhinitis or sinusitis, with general symptoms and purulent discharge. Or the discharge may change from nonpurulent to purulent. In such cases the symptomatic treatment with cocaine anesthesia should be carried out in connection with other appropriate treatment.

After cocainization of the nasal ganglions came into use, various symptoms outside the direct innervation of the ganglion were reported as relieved after treatment given for the neuralgic or sympathetic syndrome. Among these are scotoma, globus hystericus, intractable hiccup, cricodynia, subjective feeling of sore throat without signs, pain in the ear secondary to cancer [7] and the pain of tuberculosis of the larynx [8] or of abscess of the tongue.[9] The pain from carious teeth has been known to disappear under anesthesia of the ganglions (Cody, Torrey). Myalgic nodes in the trapezius and sternomastoid muscles followed the same course; likewise vomiting of pregnancy, uterine pains, dysmenorrhea, chorea, angina pectoris, lumbago and sciatica, and pain in the lower extremities, even to the toes. Heitger [10] has reported interesting cases of brachial neuralgia or neuritis due to sphenoid and ethmoid infection completely relieved by cocainization of the nasal ganglion. I have seen the not uncommon pains in the neck and shoulders without evidence of disease of the vertebrae or nerves checked by ganglion anesthesia. In some cases sinusitis could be recognized, in others not.

TREATMENT AND EFFECT

The connecting link between all these symptoms and the nasal ganglion is furnished by the relief following cocainization of the ganglions after the application of a small amount of concentrated (90 per cent) cocaine solution to the mucosa over the ganglion. Many rhinologists have begun with 20 per cent solution, but rapidly changed to full strength. All authors remark the rapid, as it were miraculous, relief given in appropriate cases. The response to treatment varies. It is most marked in spasmodic rhinitis. The photophobia and lacrimation cease a minute or two after the applicator has been placed in position, rapidly followed by the other symptoms. Equally prompt is the effect on many neuralgias and paresthesias. Sometimes a single application, especially if it is given early, will cut short the symptoms of either neuralgia or coryza, but in others, especially in severe neuralgias, while marked relief follows anesthesia, pain may return within from a few hours to twenty-four hours and may require repeated treatments. Relapses may follow fatigue, emotional strain and continued toxemia, sometimes without discoverable cause.

So rapid is the change in the patient's feelings that those who see the operation for the first time conclude the whole symptomatic state hysterical; yet all advocates of the method agree that other evidences of hysteria are absent. Many patients are obviously neurotic, but others are not; and the suggestion of Adson, quoted by Bourguet, that Sluder obtained his results (after injection) by persuasion could easily be contradicted by observation in Sluder's outpatient department, where the anesthesia treatment was carried out in a routine or even perfunctory manner by assistants without any discussion of the treatment or any attempt at persuasion. Some facts regarding neurotic features in the literature indicate the variety of cases seen in practice. In the early days of ganglion anesthesia, it was still supposed that some hay-fever subjects could get attacks by looking at pictures of hay fields. They were described as neurotic, almost melancholic; yet O. J. Stein as early as 1908 asserted that subjects of nasal neuroses are not more neurotic than others or, if they are, are more likely to have been made so by the nasal disease. To use his own words: "The neurotic temperament if present is the offspring rather than the parent." Or, again, "Patients may be phlegmatic in all but their hyperesthetic fifth nerve or some other special nerve tissue." Similar assertions were made at the discussion on spasmodic coryza in the Royal Society of Medicine by Freeman and Coke, and recently by A. Gunn Auld regarding asthmatic persons, who are said to be less neurotic than normal individuals.

Some have compared the results of Sluder's treatment with Bosworth's cocaine application for hay-fever, and others have asserted that all the results in secretory or vasomotor cases are due to shrinking of the mucosa over the middle turbinate. But the difference in result between ganglion anesthesia and spraying or swabbing is very striking, and those who try to get Sluder's results without following his technic have signal failures. As regards shrinking of the mucosa, Sluder advised, and his followers used, very small applicators with a small drop of concentrated cocaine, or cocaine "mud," applied over the region of the ganglions. In the case of patients with broad noses, and without complete obstruction, an expert need not use a preliminary cocaine spray. There is no running down of cocaine over the adjacent mucosa; yet even with extensive congestion shrinking follows. In patients with eye symptoms, the blanching of the conjunctivae and the cessation of lacrimation and photophobia put a local ischemic effect from cocaine out of the question. Some rhinologists have combined epinephrine with cocaine, but most do not use it or ephedrine, which has a useful place in some cases of rhinitis. G. E. Shambaugh, whose criticism of Sluder's investigations might serve as a model in some respects, raised a therapeutic question which deserves consideration. He advised the therapeutist to "search out and eradicate any existing focus of infection and resort to local treatment of the ganglion only when neuralgia was not relieved

7. Clerf, L. H.: Control Through Nasal Ganglion of Earache of Laryngeal Origin, J. A. M. A. **82**: 630 (Feb. 23) 1924.
8. Gundrum, L. K.: Pain from Tuberculous Laryngitis Relieved by Cocainization of Nasal (Sphenopalatine, Meckel's) Ganglion, J. A. M. A. **83**: 998 (Sept. 27) 1924.
9. Hansel, F. K.: Otalgia from Abscess of Tongue Controlled by Cocainization of Nasal Ganglion, Arch. Otolaryng. **7**: 165 (Feb.) 1928.
10. Heitger, J. D.: South. M. J. **18**: 218 (March) 1925.

by other measures." In many cases of sinus neuralgia this process may be followed, but a patient with severe neuralgia or high grade spasmodic coryza is in no condition for searching examination. Examination is futile until an anesthetic procedure has been carried out. The visible presence of inflammatory processes is no contraindication to this. In view of the facts, it seems idle to deny a relation because cocaine cannot pass bony or fibrous walls, as many say, and it is most desirable to try to ascertain just how the effect is brought about. Unpleasant results are rare. Owing to the minute applications, there are no local effects. Pallor, exhilaration, palpitation or tachycardia may occur, but these conditions are rarely troublesome.

When the cocaine application fails to give the desired relief, Sluder and his followers used injections, especially alcohol with 5 per cent phenol (carbolic acid) in the region of the ganglion, and these often stop the symptoms permanently or for long periods. It is perhaps necessary to say that the object of alcohol injections is not the destruction of the ganglion. They suspend function for several weeks and the ganglion recovers its function, as Harvey Cushing [11] stated in 1920. As the injections should be made only by experts, I shall not describe the technic, but as slight differences in method have been described, it should be remembered that these may depend on anatomic variations (to be mentioned).

ANATOMIC STRUCTURE AND FUNCTION OF THE NASAL GANGLION

So far the anatomy and physiology of the nasal ganglion have not cleared up the clinical puzzles. This ganglion, called sphenopalatine by the Basel Nomenclature of 1895, also called Meckel's or sphenomaxillary, the largest nerve center outside the cranial cavity, lies in the sphenopalatine fossa close to the sphenopalatine foramen, just above and posterior to the posterior tip of the middle turbinate. The sphenoid and postethmoid sinuses are above, the maxillary sinus in front, the pterygoid fossa behind. Sometimes the sphenoid sinus is also in relation posteriorly because of hollowing of the pterygoid process; in fact, the topographic relations show many variations in different specimens. Between the ganglion and the nasal cavity is connective tissue and mucosa, the distance varying from 1 to 8 or 9 mm. The variations may have bearings on the response to local treatment.

A detailed account of the ganglion and its roots and branches may be omitted here, but it may be noted that it innervates and is intimately connected with every region treated by otorhinologists, and the distribution of its nerves is so extensive as to give rise to symptoms, direct or reflex, in every part of the body (Ruskin, 1925). According to some the ganglion is sympathetic, to others spinal, to others vegetative. Sluder ascribed both the sympathetic and the neuralgic parts of the syndrome to the sympathetic nerve. H. Burger does not think that this contradicts more recent neurologic views, according to which the sympathetic is no longer considered a purely centrifugal nerve. Histologic studies of the ganglion in disease are few and unsatisfactory. Klaus Vogel,[12] in a series of cases of ozena found the extirpated nasal ganglions atrophied, although in cases coming to autopsy the gasserian and other ganglions were normal. At operations for removal of the ganglions he found the latter painful to touch, notwithstanding the anesthesia. After extirpation, sensibility to touch, pain and heat and cold were affected for some months, but then returned to normal. Vascularity and glandular secretion, including tears and sweat, were not affected. Muck's epinephrine test was negative and operated and unoperated sides reacted alike to cocaine-epinephrine applications. Vogel makes the interesting suggestion that the functions of the nasal ganglions can be carried on by other nerves, such as possibly those forming the perivascular network. But little experimental work has been done, although it goes back to Claude Bernard and to Aschenbrandt, and it does not prove more than that irritation of the exposed ganglion is followed by increased secretion, increased temperature of the nasal mucosa and swelling of the erectile tissue. In dogs, Prévost did not find disturbance of sensibility after extirpation. Some think the ganglion acts as a vasomotor regulator, more accurately a peripheral regulating center of nasal vasomotors. Most advances in our knowledge of the nasal ganglion in recent years have come from rhinologists rather than from anatomists and physiologists, and this is natural because, as Feldmann and Ivanitzky [13] say in an important study, the nasal ganglion is the local nerve center of the nasal cavity and on account of its position is often exposed to disease. But rhinology suffers, as Bertein [14] says, from the newness of knowledge of the nervous system. The beautiful work of Fenton and Lassell [15] gives promise of an improvement. For the highly specialized operation of ganglion injection, O. H. Homme's article [16] will be helpful.

PATHOLOGY

Conceptions of the morbid processes involved in the nasal ganglion syndrome have never been clear. Sluder early considered the syndrome the effect of some irritant on the ganglion. He found that cocaine applied over the ganglion affected the nerves, and not unnaturally concluded that soluble poisons from foci of infection could also pass through membranes or tissues and cause changes in the functions of the nerves. Mink in 1915 pointed out the irritating effect of nasal secretions often visible on the lips as an indication of the possibility. Sluder often saw infection of the ethmoid and sphenoid sinuses in his patients, but also reported cases in which no evidence of such processes could be discovered. At one time he thought the maxillary sinuses were not concerned, but these also were found to be involved in other cases. Since then the recognition of latent sinusitis has made progress, and the difficulty of excluding it even by the aid of roentgenograms is generally admitted by rhinologists, as Ramadier pointed out in 1922. Many patients presenting the nasal syndrome have chronic sinusitis, including polyp formation, but the local lesions are often slight and found only by experts and even by those only after repeated examinations. Various writers have considered that endocrine disturbances have at least a part in the production of the syndrome, aside from the cases of definite myxedematous infiltration of the nasal and pharyngeal submucosa, such as F. J. Novak [17] has described. Very early (Duverger and Dutheillet de

11. Cushing, Harvey: Am. J. M. Sc. **160:** 157 (Aug.) 1920.
12. Vogel, Klaus: Ztschr. f. Hals-, Nasen- u. Ohrenh. **22:** 507 (Feb. 16) 1929.
13. Feldmann, A. I., and Ivanitzky, M. F.: Ztschr. f. Hals-, Nasen- u. Ohrenh. **19:** 353 (Dec.) 1928; abstr. J. Laryng. & Otol. **43:** 521 (July) 1928.
14. Bertein: Arch. internat. de laryng., 1925, p. 520.
15. Fenton, R. A., and Lassell, O.: Tr. Am. Otol. Soc. **18:** 183, 1898.
16. Homme, O. H.: Roentgen Ray as an Aid in the Injection of the Sphenopalatine Ganglion, Arch. Otolaryng. **7:** 553 (June) 1928.
17. Novak, F. J.: Ann. Otol. Rhin. & Laryng. **36:** 829 (Sept.) 1927.

Lamothe, 1921) allergic phenomena were called on. In fact, the explosive symptoms of a sinusitis or a vasomotor rhinitis at times strongly suggest anaphylaxis, and Sluder had considered this, but his attention was directed to other aspects of the subject and his untimely death prevented him from carrying the matter as far as his inquiring and critical mind might have done.

There are still writers who find explanations for the symptoms described in the "general condition," and assert that local treatment is useless. But cocaine anesthesia of the nasal ganglions is not local treatment in the ordinary sense, and does not relieve the physician from the duty of investigating all the possibilities, including sensitization tests and treatment, and prolonged search for sinus infection by an expert.

BYRD'S THEORY OF PATHOLOGIC IMPULSES

Closely related to nasal ganglion physiology and therapy is certain work of Dr. Hiram Byrd of Florida, growing out of his studies [18] in nerve blocking. According to Byrd, "an impulse originating in a nasal bloc may travel to and be registered in remote parts of the body in the form of pain and other pathologic phenomena." Thus, after tonsil operations or in traumatic corneal ulcers there is pain due to "pathologic impulses" that travel by way of the nasal ganglions. Cocainization of the nasal ganglions stops the pain, although in the case of the cornea the latter is not anesthetized. In the case of a painful injury of the hand, anesthesia of the ganglion relieved the pain, although the hand remained sensitive. "Pathological impulses are attracted to pathologic foci, and in such a case may cooperate with the latter to establish a vicious circuit. . . . Pathological impulses may originate in either nasal bloc, or possibly elsewhere, and are or may be transmitted to the remotest parts of the body." An impulse originating in either nasal bloc is not transmitted to its fellow, but rather to both shoulders and arms, or to both lower extremities. Applying his ideas to the relief of pain in glaucoma, Byrd [19] holds that irritation of the iris results in hypertension; pathologic currents are set off at the place of irritation by way of the nasal ganglions, and so the pain is relieved by anesthesia of the latter, as so early arrested the attention of Ewing and Sluder.

The theory is further developed in terms of electrical transmission in an article on "Pathologic Currents and Asthma." [13] The nerves are compared to electric power lines carrying currents to all parts and capable of becoming overcharged and "shorting," with local injury and local symptoms, the particular symptoms depending on the location. Thus, within the lungs, asthma results; in the sciatic nerve, sciatica; in the heart, angina pectoris. The nasal ganglion acts as a switchboard, through which excess currents are frequently routed, shorting beyond and setting up symptoms. When this occurs the symptoms can be arrested by turning off the switch at the nasal ganglion; that is, by anesthetizing the ganglion. If the test is positive but not permanently successful in arresting the symptoms permanently, alcohol injection of the ganglion should be done.

Sluder's work has not only led to much benefit in practice but has opened up a large field for investigation, in which the general practitioner and the internist can find many things of importance, in addition to relieving distress and disability, and Hopkins may be correct in thinking a combination of the ideas of Sluder and Byrd will bring the solution of important neurologic troubles.

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18. Byrd, Hiram: M. J. & Rec. **121:** 141 (Feb. 4) 1925; Relation of Nasal Ganglion to Glaucoma, Arch. Ophth. **56:** 1626 (March) 1927; J. Florida M. A. **14:** 244 (Jan.) 1928; Am. Med. **23:** 169 (March) 1928; Nasal Ganglion and Chorea, Arch. Otolaryng. **7:** 257 (March) 1928; M. J. & Rec. **128:** 68 (July 18) 1921.

19. Byrd (footnote 18, second reference).

ABSTRACT OF DISCUSSION

DR. JOHN L. CHESTER, Detroit: The profession has had few opportunities to become acquainted with this explanation of the origin and control of pain. We know little of the nature or mechanism of pain. The author's subject is based on the results of the original Sluder experiment of arresting certain headaches by cocainization of the nasal ganglions, which procedure has since been found to abolish pain in the chest and elsewhere. Recently I observed demonstrations in this new technic by Dr. Hiram Byrd, pupil and successor to Dr. Sluder. He showed a train of results embracing sensory symptoms and secretory and circulatory disturbances. The contention is made that the strategic locus for the controlling of these and other pains and dysfunctions is the nasal ganglions. I have had results from this technic in such conditions as Buerger's disease, lumbago, angina pectoris, gallstone disease, and ureteral calculus. I feel that "proximal denervation" offers itself as a field for unlimited research. The conception postulates the nasal ganglions as a sort of switchboard, through which exciting currents pass. When it is anesthetized, the switch is automatically turned off. There are two kinds of nerve currents: afferent, toward the brain, and efferent, from the brain, the efferent currents "motivating and stabilizing" the various physiologic functions. Efferent currents flowing in excess quantum over a given circuit would have the effect of first speeding up the normal physiologic function most affected, until finally it is converted into a dysfunction or disease. Function, therefore, is to dysfunction what normal motivation is to abnormal motivation or, as Dr. Byrd puts it, "efferent currents in normal quantum are to physiologic functions as efferent currents in abnormal quantum are to dysfunctions." The evidence at hand would suggest the formulation of this statement into an immutable law. The actuating cause of remote dysfunctions may be traced sourceward to and past the ganglion, and through the trigeminal nerves to and past the gasserian ganglion to the brain itself. Furthermore, the nasal ganglion can be identified as the isthmus connecting the trigeminal nerve with the sympathetic system, and the remote parts of the body. When the trigeminal nerve becomes overcharged with efferent impulses or currents, and these flow away through the nasal ganglion and register in some remote locus, the resulting pain symptom will submit to arrest by anesthetization of the nasal ganglion. Such is the hypothesis on which the theory of proximal denervation for the control of pain is founded. This efferent interception should apply as a therapeutic principle not only at the nasal ganglions but at other nerves as well. The results of the exposition of this technic to date tend to indicate that there are avenues to the approach of physiologic knowledge of which we are yet ignorant.

DR. JOSEPH GRINDON, St. Louis: Dr. Sluder demonstrated to me his original neuralgic case, which occurred in a young woman who had intense pain in the left side of the face from the eyes down, in the left shoulder, and radiating down the left arm to the tip of each finger, and down the leg and foot to the toes. He made an application of cocaine to the sphenopalatine ganglion. In fifteen seconds the patient had some relief and within a few minutes she was relieved entirely of the pain for the time being.

Medical Practice.—The practice of the healing art, day in and day out, is arduous in the extreme—monotonous, deadening to some, a routine to others; to still others a task enlivened with intense interest—each case presenting a new and different problem. To the man who has much within, interest in patients never flags! It is only to the man who has ceased to be a student that routine practice becomes a drudgery and patients are visualized only as one unhappy individual after another.—Cutter, I. S.: *Illinois M. J.*, August, 1929.

ACUTE ASCENDING PARALYSIS AND MYELITIS DUE TO THE VIRUS OF RABIES *

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Up to 1877, paralysis as a predominant feature of rabies was not distinguished. It was recognized that paralysis might sometimes appear as a terminal condition, but always following, it was thought, the usual hydrophobic symptoms. Bruardel's [1] description is typical of that time: "In man rabies passes through three stages; the first is characterized by melancholy; the second by excitement and spasms of the organs of respiration and deglutition; the third, of short duration, which is rarely reached by the patient, is characterized by paralysis."

Gamaleia [2] in 1877, in a study of twenty cases of rabies in which paralysis was the predominant symptom, endeavored to distinguish on this basis a paralytic form of the disease differing from the usual type, in which paralysis occurred not at all or only as a terminal event. He grouped his cases according to the mode of onset of the paralysis. In some cases it began in the bitten member. In others, the bitten extremity was not affected but the paralysis had its onset in another extremity. In one group of his cases paralysis occurred late in the disease, following an abatement of the usual furious symptoms of rabies. In some instances the paralysis was spreading and affected one member after another, but there was no instance of a purely ascending type. All of his patients had a greater or less degree of hydrophobia. The paralysis was ushered in by high fever, headache, nausea and vomiting, followed by localized pains, usually in the injured member. This was followed by numbness, fibrillary contraction, ataxia and paresis of the affected extremity, terminating in more or less complete paralysis. Sensory changes were usually not evident; if present, they were slight. He considered the cause of death to be cardiac paralysis. The average duration of the disease in his cases was seven and one-half days; the usual duration of the nonparalytic form of rabies he estimated to be three and one-half days from the onset of symptoms.

Other authors have since described cases of rabies in which paralysis was the most prominent feature.

Hoyges [3] reports twelve cases of paralytic rabies out of eighty-six cases of the disease. Koch [4] saw in Berlin from 1908 to 1911 two of the paralytic type out of eight cases of rabies. Laufenauer [5] from 1886 to 1888 observed ten rabid persons, six of whom had the paralytic form of the disease.

Clinical rabies characterized by an ascending paralysis is apparently exceedingly rare. We have found in the literature only two cases clearly reported as such, those of Van Gehuchten and of Babes.

Van Gehuchten [6] in 1907 described the clinical and pathologic observations of an unusual case of paralytic rabies.

A man, aged 47, had been bitten on the right side of the face by his dog, which later died of a paralytic type of rabies. Thirty-six days later, the man was profoundly depressed. He wept and declared that he was going to die. The following day, he consulted a physician for an aching neuralgia of the face at the place where he had been bitten. Two days later a sudden paralysis of the left arm set in, and progressed in three or four days to the other arm, the trunk and the legs. At that time Van Gehuchten saw the patient. He was entirely conscious, but depressed. There was marked difficulty in swallowing fluids. There was no excessive salivation. Voluntary movements were abolished in all of the muscles of the pelvic girdle and in both thighs, except for the persistence on the right of a slight degree of voluntary contraction in flexing the legs on the thighs. The muscles of the legs and of the feet were normal.

The large muscles of the abdomen were completely paralyzed. The diaphragm and intercostal muscles did not show any changes except that the patient had difficulty in breathing deeply.

The left arm showed complete paralysis of all the muscles of the shoulder and of the arm. The fingers could be flexed and extended, and slight pronation and supination of the hand was possible. With the right hand these movements were executed with more force. There was also a slight degree of voluntary contraction of the biceps. The other muscles of this arm were in a state of flaccid paralysis except the pectorales, which contracted weakly. The muscles of the neck and of the face did not show any changes.

The reflexes showed bilateral absence of the knee jerks and brachial triceps. The plantar reflex was normal. There were no cremasteric or abdominal reflexes. The deep cutaneous reflexes were abolished over the paralyzed muscles in the thighs but not in those of the legs and feet.

There were no sensory changes over the entire body. There was no sphincter disturbance. The temperature ranged between 37 and 37.5 C.

Three days later, respiration was very rapid, shallow and difficult. Consciousness was intact. There were no sensory changes. There was no facial or ocular paralysis. There was difficulty in moving the tongue. The patient swallowed with extreme difficulty. There was no further progression of the paralysis in the extremities. There was incontinence of urine.

The following day, the pulse was irregular and scarcely perceptible. There was marked salivation. The ability to swallow was totally gone. Ten hours after this examination, the patient died.

Gross and microscopic examination of the spinal cord did not show any demonstrable pathologic changes except for the presence of some large bacilli. There were marked rabic lesions, however, in the spinal ganglions.

Two of three rabbits inoculated with fragments of the brain and spinal cord of this patient died of rabies.

Babes [7] described two cases of rabies of the paralytic form. One of these was a borderline case between the "furious" and the "dumb" type. The other one is of particular interest:

A young man had been bitten on the right shoulder by a dog from eight to ten months before symptoms developed. The onset was manifested by a kind of ataxia with pain, swelling, and hyperesthesia about the scar of the bite.

The following day hyperesthesia of the leg was noted followed by a weakness which extended to the opposite extremity. Little by little the lower extremities became paralyzed. The paralysis extended to the sphincters, the abdomen, the intestine and the diaphragm. The patient died on the twelfth day after onset of symptoms of respiratory and cardiac paralysis. Rabbits were inoculated with fragments of cord and developed rabies in twenty-two days. Microscopic examination of the brain, cord and spinal ganglions of this person showed typical "rabic nodules."

REPORT OF CASE

Recently at the Vanderbilt University Hospital we had the opportunity to study a case of an acute ascend-

* From the Department of Pathology, Vanderbilt University Medical School.

1. Bruardel, cited by Gamaleia (footnote 2).
2. Gamaleia: Etude sur la rage paralytique chez l'homme, Ann. de l'Inst. Pasteur **1**: 63, 1887.
3. Hoyges, cited by Babes (footnote 7).
4. Koch, Joseph: Über die Entstehung der akuten Paraplegie nach Lyssa-infektion, Centralbl. f. Bakteriol. I, 1912.
5. Laufenauer, cited by Koch, Joseph, in Kolle and Wassermann, Handbuch der pathogenen Microorganismen, ed. 2, **8**: 289, 1913.
6. Van Gehuchten, A.: Un cas de rage humaine, évolvant cliniquement comme une poliomyelite antérieure aigue ascendante, ou comme une paralysie ascendante de Landry, Le nevraxe **9**: 235, 1907.
7. Babes, V.: Traité de la rage, Paris, 1912.

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ing type of paralysis and myelitis which proved to be rabies:

History.—A student nurse, aged 23, seen by the house physician, Nov. 12, 1928, complained of a vague pain in her left leg, which began on November 9. There was slight numbness of the leg, but no localization. At this time there was no fever, nor subjective symptoms other than the peculiar sensation in the limb.

The following day she complained of having been nauseated the night before, and that morning. There was slight soreness in the right lower quadrant of the abdomen, but no tenderness. The symptoms in the leg remained the same. Physical examination was essentially negative. Later the same day there was some localization of symptoms in the right lower quadrant of the abdomen. There was a constant rather dull pain in this region. There was a slight fever (99.5) and a moderate leukocytosis (13,000).

The next day, November 14, the nausea and abdominal pain were better, but there still persisted numbness and pain in the left leg as high as the hip. She stated that she could hardly walk because of the numbness. Examination of the member showed that it was held tense, and trembled slightly. This was thought to be voluntary. The knee jerk on the left was hyperactive. Sensation as tested with a pin was dull, but the same finding existed on the right side. At this time the patient was mentally depressed. She was admitted to the hospital on the following morning.

The past history was essentially negative. The patient had been training as a nurse for about six weeks. Before that time she had lived at home. She was vaccinated for typhoid in October, 1928, and for smallpox the first week in November, 1928. The latter did not make a lesion on her arm and did not elicit any reaction. There was no history of contact with a rabid animal or with a case of poliomyelitis.

Clinical Course.—On the morning of admission to the hospital, the patient was extremely nervous and apprehensive. The left leg was quite spastic and there was almost complete paralysis of the left leg and thigh. The extensor muscles seemed to be less affected than the flexors. There was marked diminution of sensation over the inner aspect of the leg, about half way up the thigh, and there was tenderness over this thigh. The anesthesia did not conform to any anatomic types. It was variable in extent.

The following morning, November 16, the patient was drowsy. There was complete flaccid paralysis of the left leg and definitely diminished strength in the right foot. The anesthesia was about the same as on the day before. The patient was observed to have urinary incontinence, but she was unaware of the fact. A lumbar puncture done at this time showed a cell count of 75 per cubic millimeter; 15 per cent were polymorphonuclear leukocytes, the rest lymphocytes. A few crenated red blood cells were also seen in the fluid. The fluid was under normal pressure. The leukocyte count was 17,000. The temperature was 99 but that evening it rose to 102. In the afternoon, 70 cc. of convalescent poliomyelitis serum was given. That night there was almost complete paralysis of the right foot.

The next morning, November 17, both legs were practically paralyzed. Tendon reflexes were absent in the left. A feeble knee jerk was elicited in the right. The left leg was almost completely anesthetic and there was no sense of position. The right leg was hypesthetic, but painful stimuli were felt. The sensory changes were difficult to interpret because they changed from one moment to the next. The control of the bladder was better than the day previously. The muscular strength in the shoulders, arms and face was good. The heart and lungs were clear.

That evening at 6 o'clock the patient showed marked changes. She was fully conscious but lay quietly in bed, speaking only when spoken to. Her voice was weak but did not show any change in pitch or quality. She complained of slight numbness in both hands, and her grip was not as strong as it had been. The left pupil was larger than the right. Extra-ocular movements were normal. The tongue could be protruded in the midline. There was no difficulty in swallowing. There was marked abdominal distention. At this time, 65 cc. of convalescent poliomyelitis serum was given.

At 3 o'clock the following morning the patient's respirations had dropped to between six and eight a minute. The pulse was 60, of good volume and regular. The patient was completely conscious, but depressed and very apprehensive. She had a headache, and complained of slight tickling in her throat. Her condition remained about the same until shortly after 4 a. m. when she began coughing slightly. At this time she was still fully conscious. At 4:15 she gasped suddenly, tried to speak and then became intensely cyanotic. One or two gasping respirations followed before they ceased completely. Artificial respiration was given for several minutes, but the heart stopped beating, and the attempt was abandoned.

Laboratory Observations.—The spinal fluid culture was negative; the spinal fluid Wassermann reaction was negative; the spinal fluid globulin reaction was positive, and the spinal fluid colloidal mastic test was 5555532111.

Necropsy.—Examination was made two hours post mortem. The gross examination did not disclose any noteworthy changes.

Microscopic examination of the lungs disclosed the presence of some small foci in relation to the bronchi, in which the alveoli contained an exudate of polymorphonuclear leukocytes, large mononuclear leukocytes and some red blood cells. A similar exudate was in some of the bronchi. This was apparently an early terminal acute hemorrhagic bronchopneumonia.

The other organs were not remarkable.

Examination of the spinal cord (lumbar) revealed that the pia was thickened. It was diffusely infiltrated with lymphocytes and plasma cells, the former predominating. This infiltration was particularly marked about the veins, these structures being surrounded by thick collars of lymphocytes. It was also prominent in the inner portion of the pia, next to the white matter of the cord. It appeared to be about equally distributed in relation to the anterior and posterior portions.

In the white matter of the cord there was an extensive diffuse type of destruction. The tissue appeared granular and extremely loose. No intact myelinated fibers were seen. At the periphery, near the pia, the remains of myelin sheaths could be recognized, likewise in small foci distributed here and there throughout the white matter. These were finely granular and were undergoing disintegration. Nerve fibers could not be made out in them. There was in the white matter a uniform diffuse infiltration of large mononuclear leukocytes, most of which contained phagocyted nuclear material and numerous clear vacuolated spaces, evidently fat. There were likewise lymphocytes scattered about. The smaller blood vessels showed marked perivascular rings of lymphocytes. The neuroglia trabeculations were in some places infiltrated with lymphocytes and phagocytic large mononuclear leukocytes.

The destruction in some sections seemed to be more extensive in the white matter at the peripheral ends of the anterior and posterior horns, especially the former. In the other sections it appeared more extensive near the periphery of the lateral portions, while in still others it was more marked near the horns.

The cells lining the central canal could be made out, but their arrangement was distorted, and a definite lumen was not present in the majority of the sections. Instead there were masses of large mononuclear leukocytes and lymphocytes surrounding these cells and filling up the lumen.

In the gray matter there was likewise extensive necrosis, and infiltration of large mononuclear phagocytic cells and lymphocytes. The ganglion cells in both the anterior and the posterior horns showed all stages of degeneration. Nearly all of the motor ganglion cells of the anterior horns had disappeared completely. Some of the remaining ganglion cells were very pale and granular with no evident nucleus, while others were surrounded by or contained phagocytic large mononuclear cells. In preparations stained by the carbolanilinefuchsin method as used by Goodpasture[8] there appeared in many of the remaining ganglion cells of the anterior horns small round to oval red staining bodies containing very small round lighter staining vacuolated spaces. In some of the cells only one of these bodies was seen, while others contained

8. Goodpasture, E. W.: A Study of Rabies, with Reference to a Neural Transmission of the Virus in Rabbits, and the Structure and Significance of Negri Bodies, Am. J. Path. **1**: 572 (Nov.) 1925.

up to seven of them. These were typical Negri bodies. No Negri bodies were seen in the ganglion cells of the posterior horns.

The walls of some of the small arteries in the gray matter near the canal were infiltrated with lymphocytes, plasma cells and large mononuclear cells. The wall of one of these had ruptured, letting blood out into the neighboring tissue.

Fig. 1.—Dorsal nerve roots showing extreme central degeneration and destruction of myelinated fibers, with cellular infiltration and perivascular manteling.

All of the vessels in the cord had infiltrations of lymphocytes and plasma cells about them. No polymorphonuclear reaction was seen anywhere in the sections.

The nerves arising from the dorsal portion of the cord showed interesting changes. These lesions varied considerably in their severity, ranging from slight focal necroses to most extensive destructive changes.

The earlier lesions were manifested by small areas, in which the fibers and their myelin sheaths had disappeared, leaving a space which contained granular material, numbers of lymphocytes and plasma cells, and some large mononuclear leukocytes bearing phagocyted nuclear material and fat droplets. The vessels at the periphery of these nerves showed marked perivascular infiltration of lymphocytes and a few large mononuclear leukocytes. The perineurium did not show any definite change.

The other extreme of this picture showed most extreme destruction of the central portion of the nerves, only thin shells remaining around the edge, in which a few healthy looking fibers were seen. The central portion was filled with granular material in which a few filaments of nerve fibers could be seen. This whole region was filled with lymphocytes, plasma cells and large mononuclear phagocytic cells bearing fat vacuoles and nuclear débris. Near the edges one could see apparently intact myelin sheaths, which had large mononuclear leukocytes adherent to them, evidently in the first stages of destruction. The perineurium of these nerves was likewise intact.

Some of the ventral nerves showed only slight infiltration of lymphocytes, but these changes were extremely small in comparison with the extensive destruction of the sensory nerves.

Unfortunately, the brain was restricted from the examination.

Experimental Work.—An emulsion of a portion of spinal cord saved in saline solution was made twenty-four hours after the autopsy by grinding the fragments in a mortar with sterile saline solution. The skin and cornea of a healthy rabbit (rabbit 1) were scarified and this emulsion was rubbed into the scratches. Seventeen days after this procedure the animal showed evidence of muscular weakness, which progressed until the twenty-second day, when the animal was completely paralyzed. At this time it was killed, and fragments of its brain and cord were inoculated into four other rabbits in the following situations:

Rabbit 3, skin and cornea.
Rabbit 4, skin alone.
Rabbit 5, cornea alone.
Rabbit 6, brain.

A section from rabbit 1 showed typical Negri bodies.

The final outcome in the other animals was as follows:

Rabbit 3 died of rabies after a period of paralysis, twenty days after inoculation.
Rabbit 4 survived.
Rabbit 5 survived.
Rabbit 6 died of rabies after being paralyzed, eighteen days after inoculation.

In order to ascertain whether rabbit 4 and rabbit 5 were immune to rabies, they were inoculated, along with rabbit 9 and rabbit 10, normal rabbits, intracerebrally with fixed virus. All of these animals died of rabies from the seventh to the tenth day following inoculation.

A second rabbit (rabbit 2) which had been inoculated in the sciatic nerve with an emulsion of the patient's cord, died in eight weeks of rabies.

The batch of vaccine virus with which the patient was inoculated was tested in rabbits for the presence of rabic virus and was found to be free from it.

In view of the fact that the patient had been vaccinated for smallpox ten days previous to the onset of symptoms, the possibility was considered that she might have had a post-vaccinal myelitis. The fact that the site of her vaccination did not give any reaction was, of course, against this possibility. Nevertheless, the sites of the cutaneous inoculation and of the corneal inoculation in the rabbits were carefully observed for a possible vaccine reaction, but such a reaction was not noted.

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COMMENT

The case reported here, then, is one of an ascending paralysis due to an acute destructive ascending myelitis caused by rabic virus. It does not conform to any of the types of paralytic rabies that I have been able to find. By paralytic rabies is meant the form of the disease in which the most prominent clinical feature is paralysis. This is in contrast to by far the most frequent form of rabies in the human being, which is characterized by symptoms of hydrophobia and violent

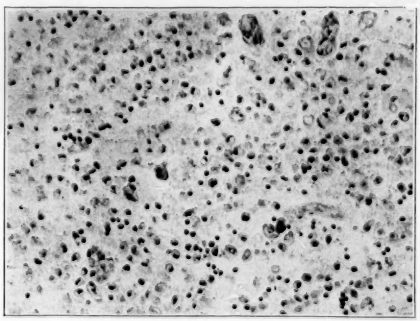

Fig. 2.—Section of dorsal horn (lumbar segment) showing destructive lesion with large phagocytic cell infiltration.

mental disturbances, and which sometimes terminates in a paralysis of brief duration.

Van Gehuchten's case is somewhat similar to mine, but the paralysis was descending, rather than ascending, and there remained some voluntary mobility of the distal portions of the extremities. He does not state that the paralysis started out with spasticity. There

were no sensory changes in his case, but terminal difficulty in swallowing and excessive salivation were noted.

Babes' case, as far as his description goes, is quite similar to mine so far as the onset and march of the paralysis are concerned. In his case, however, the

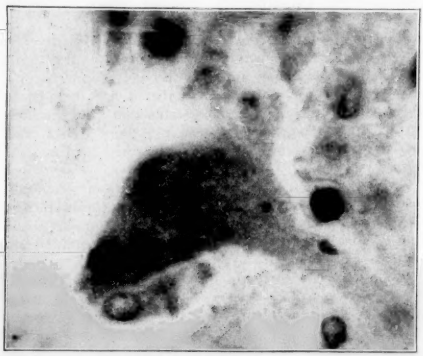

Fig. 3.—Motor ganglion cell (ventral horn) showing Negri bodies (lumbar segment, human).

initial symptoms began with sensory disturbances at the site of the bite on the shoulder. He did not make any note of the mental condition of the patient, or of the temperature.

In neither of these cases, however, are evidenced the extreme destructive anatomic changes in the cord which were present in my case. Van Gehuchten could find only the spinal ganglions to be affected, while Babes, although the cord, brain and ganglions presented "rabic nodules" (or perivascular collars of round cells), did not make any mention of a destructive type of lesion.

As compared with cases reported by Gamaleia, the case reported here is one of a pure ascending type of paralysis. In contrast to the reports by Van Gehuchten and Babes, the disease in my case was initiated by symptoms referable to involvement of the peripheral nervous system of the lower extremities, increasing and developing into an uncomplicated instance of ascending paralysis.

In the two cases reported by these authors, there were initial symptoms referable to the part bitten, involving an upper extremity before the onset of symptoms referable to the lower extremities. The case reported here therefore is, so far as I have been able to determine, unique in that the paralysis was purely ascending and had an anatomic basis in an acute destructive rabic myelitis.

Among incidental changes, the respiratory center in my case was affected before the heart stopped, in contrast to the observations of Gamaleia. My patient did not have a high fever or vomiting at the onset although she felt nauseated on one occasion. The mental changes, on the other hand, fit in well with his description. The duration of the disease was nine days from the time symptoms were first noted, as compared with Gamaleia's average of seven and one-half days.

Clinically my patient offered great difficulties from the standpoint of diagnosis.

There are but few definitely proved causes of an acute ascending type of myelitis. As far as I have been able to ascertain, poliomyelitis, syphilis, rabies and certain pyogenic infections are the only conditions in which a specific type of lesion is connected with a specific virus.

At this point it might be well to mention that in the literature there appears to be a confusion between the terms ascending myelitis and ascending paralysis. That it is possible to have an ascending form of paralysis without any demonstrable myelitis has been demonstrated by examinations of the spinal cord in many cases of so-called Landry's paralysis.

The condition of an acute ascending type of myelitis, often without clear distinction from paralysis, has been attributed to numerous causative agents and described as accompanying or following a wide group of infections and intoxications. From the standpoint of differential clinical diagnosis, these cases offer peculiar difficulties.

Poliomyelitis has been described as causing an acute ascending paralysis. Wickman,[9] out of 868 cases, reported thirty-two of this type. Draper [10] has observed cases of this form and remarks that "following a rapidly advancing paralysis of arms or legs, signs of embarrassment of the muscles of respiration begin to make their appearance. A small number of cases seem to have direct involvement of the medullary respiratory center and appear to die from rapid exhaustion of this center, although the muscles of respiration are still operating."

Given a case such as I have described, without the history of a bite or scratch of an animal, it is difficult clinically to rule out poliomyelitis. The factors against it, however, in this case are distinct. There was no history of contact with poliomyelitis or of a prevalence of it in the community. The patient was 23 years old, which does not exclude her from the disease but points against it. She had marked mental symptoms, depression and apprehension, as contrasted with the

Fig. 4.—Motor ganglion cell (ventral horn) showing Negri bodies (lumbar segment, human).

alertness of a poliomyelitic patient. Draper [11] says that "objective sensory losses in poliomyelitis are almost unknown, and sphincter disturbance except in the ear-

9. Wickman, O. I.: Beiträge zur Kenntniss der Heine-Medin'schen Krankheit (Poliomyelitis acuta und verwandter Erkrankungen), Berlin, 1902.
10. Draper, George: Acute Poliomyelitis, Philadelphia, 1917.
11. Draper, George: Acute Anterior Poliomyelitis in A Text Book of Medicine, edited by Cecil, Philadelphia, 1927.

liest stage is rare." My patient had marked diminution of sensation in her left leg, and incontinence of urine. The onset of paralysis was six days after the first symptoms, while the usual time in poliomyelitis is on the second day. The paralysis was paraplegic in form as against the usual monoplegic type in poliomyelitis. The prodromal symptoms were not severe; the patient did not have a great elevation of temperature at any time. The spinal fluid cell count was 75 on the seventh day, whereas in fatal cases of poliomyelitis, with few exceptions, the counts during the first twelve to eighteen hours are more than 700 or 1,000, rising as the disease progresses.

The question of so-called infectious myelitis opens up a field which is extremely confusing. Ascending myelitis has been described as being caused by numerous different organisms. Curschmann [12] was able to demonstrate *B. typhosus* in the cord in an acute ascending myelitis during the course of typhoid. Remlinger [13] (1896) described a case of this condition as caused by a streptococcus. Smirnow [14] cites cases in which it has been attributed to or associated with diphtheria, influenza, streptococcus and staphylococcus infections, pneumonia, smallpox, typhoid, meningococcus meningitis, malaria, epidemic encephalitis, rabies, antirabic treatment, tuberculosis, syphilis, measles and anthrax. Phifer and Forster [15] have described two cases of an acute form of ascending myelitis in association with gonorrhea. It has also been described following autointoxication from leukemia, hyperthyroidism, hematoporphyrinuria and nephritis. From exogenous intoxications it has been described following the use of such drugs as alcohol and arsphenamine. Probably in many of these instances no acute inflammatory changes in the spinal cord were demonstrated but were assumed.

There remains also to be considered the clinical syndrome first described in 1857 by Landry, which goes under his name. From an etiologic and pathologic point of view, it is doubtful, as Smirnow points out, whether such an entity exists, because cases of "Landry's paralysis" have been attributed to almost as diverse a group of conditions as those cited. That rabies is possibly a cause of Landry's paralysis was pointed out in 1906 by Remlinger.[16] At that time he laid particular emphasis on the fact that, in fatal cases of an acute ascending paralysis of unknown origin, inoculation of rabbits with emulsion of spinal cord from the patient was the reasonable procedure to prove that the disease was due to rabies. He was not the only author, however, to recognize the importance of considering rabies in cases of this kind.

Van Gehuchten [6] reports that at the Congress of Neurology at Lille in August, 1906, Brissaud, Sicord and Tanon contended that "it is always necessary to think of rabies when one meets with the syndrome of Landry. It appears in fact that there are attenuated cases of prolonged paralytic rabies giving this picture, the truth of which has been proved by experimentation."

Babes [7] in 1912 cited a case which had been diagnosed as Landry's paralysis in a woman who had been known to have been bitten by a dog ten months previously. At autopsy the diagnosis of rabies was confirmed both by microscopic examination and by inoculation of a rabbit.

Cases of Landry's paralysis have been described following chickenpox (Waldman [17]), the use of tetanus antiserum (Lerond [18]) and influenza (Warfield [19]), poliomyelitis (Winther [20]), measles (Box [21]), malta fever (D'Alessandro [22]) and syphilis.

The pathology of the condition is likewise diverse. Descriptions varying from insignificant structural tissue changes to the most unusual destructive microscopic lesions have been described, so that I am inclined to agree with Smirnow when he states that "the question opens, whether, generally speaking, there exists such an entity which can be strictly classified as Landry's paralysis."

Numerous cases of ascending paralysis occurring during Pasteur treatment are described in the literature. The paralysis in its clinical form is quite similar to the case I have described, except that it is much milder and that the patients usually recover.

Syphilitic myelitis should always be considered. According to Cole [23] this type usually occurs in males in the vigorous years of life, with a history of recent infection. It usually occurs in the first months or years of the disease, often terminating fatally and rapidly, in as short a time as fifteen days.

In an effort to establish an etiologic diagnosis of an ascending paralysis, it is obvious that the history is the only means during life of establishing a diagnosis of rabies. Lack of evidence of contact with a rabid animal must leave the case in the dark until the anatomic observations clear it up. In this respect, it is of utmost importance in all fatal cases of ascending paralysis of an unknown etiology, not only to study the case bacteriologically but to inoculate rabbits, and monkeys if possible, with portions of the brain and cord, as well as to make a careful search in the fixed specimens for Negri bodies. By such careful postmortem study, possibly many doubtful cases can be cleared up. Undoubtedly cases of the paralytic form of rabies have passed by without recognition.

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SUMMARY

1. The case reported here is that of an ascending paralysis due to an acute destructive rabic myelitis.

2. The diagnosis is based on the presence of Negri bodies in ganglion cells of the spinal cord, and on the development of rabies in inoculated rabbits.

3. The case reported is believed to be unique in its pathologic anatomy.

4. An attempt should be made to establish the etiologic agent of every case of a similar nature not only by bacteriologic studies but, in those terminating fatally, by inoculation of rabbits and monkeys with spinal cord to establish the presence of rabic, poliomyelitic or other viruses.

12. Curschmann: Bemerkung über das Verhalten des Centralnervensystemes bei akuten Infectionskrankheiten, Verhandl. d. Kong. f. innere Med. **5**: 469, 1886.

13. Remlinger, P.: Un cas de paralysie ascendante aigue (maladie de Landry) due au streptocoque, Med. mod., Paris **7**: 209, 1896.

14. Smirnow, L. I.: Die pathologische Anatomie und Pathogenese der Paralysis ascendens acuta, Arch. f. Psychiat. **78**: 585, 1926.

15. Phifer, F. M., and Forster, N. K.: Gonorrheal Myelitis, Arch. Int. Med. **32**: 530 (Oct.) 1923.

16. Remlinger, P.: Syndrome de Landry et rage paralytique, Compt. rend. Soc. de biol. **60**: 818, 1906.

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18. Lerond, J.: Syndrome de paralysie ascendante, atteignant la face après injection de sérum antitétanique; régression rapide au niveau des membres, lente à la face, Bull. et mém. Soc. méd. d. hôp. de Paris **50**: 1728 (Dec. 23) 1926.

19. Warfield, L. M.: Acute Ascending Paralysis Following Influenza, Wisconsin M. J. **14**: 508 (May) 1916.

20. Winther, K.: Poliomyelitis with Landry's Paralysis, Hospitalstid. **65**: 413 (June 28) 1922.

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22. D'Allesandro, F.: Ascending Paralysis During Malta or Undulant Fever, Policlinico (sez. prat.) **24**: 1213 (Sept. 30) 1917.

23. Cole, H. N.: Acute Syphilitic Transverse Myelitis, Arch. Dermat. & Syph. **9**: 102 (Jan.) 1924.

EFFECT OF HOMOLOGOUS TRANSPLANTS ON THE PROSTATE GLAND IN WHITE RATS *

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The results of numerous experimental transplantations of various tissues have been reported, but few investigations of this character have been attempted with the prostate gland.

RESULTS

The results obtained from partial and complete prostatectomy in white rats were nil. There was no alteration whatever in breeding, sex capacity, general activity or appearance.

TABLE 1.—*Experimental Transplantation of Prostate (Rat)*

Number	Age, Months	Operative Procedure	Date of Operation	Date of Autopsy	Effect on Animal	Transplant	Effect on Prostate
1	12	Intraperitoneal transplant.....	6/ 9/27	8/ 9/27	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
2	12	Scrotal transplant	6/23/27	8/16/27	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
3	6	Subcutaneous transplant	7/14/27	7/28/27	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
4	9	Subcutaneous transplant	7/14/27	8/14/27	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
*5	11	Intraperitoneal transplant.....	8/ 4/27	9/18/27	Negative	Autolysis	Complete prostatectomy before transplantation
†6	7	Intraperitoneal transplant.....	8/ 4/27	10/ 4/27	Negative	Autolysis	Complete prostatectomy before transplantation
7	6	Intraperitoneal transplant.....	8/16/27	9/18/27	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
‡8	8	Intraperitoneal transplant.....	8/16/27	9/30/27	Negative	Autolysis	Complete prostatectomy before transplantation
§9	7	Subcutaneous transplant	8/16/27	11/16/27	Negative	Autolysis	Complete prostatectomy before transplantation
10	3	Subcutaneous transplant	6/20/28	7/20/28	Negative	Autolysis	No note
11	9	Subcutaneous transplant	6/30/28	8/30/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
12	12	Subcutaneous transplant	6/30/28	9/30/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
13	5	Subcutaneous transplant	7/ 7/28	9/ 7/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
14	6	Subcutaneous transplant	7/ 7/28	9/21/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
15	6	Subcutaneous transplant	7/11/28	8/30/28	Negative	Autolysis	No note
16	7	Subcutaneous transplant	7/11/28	10/11/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
17	6	Subcutaneous transplant	7/11/28	10/24/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
18	5	Subcutaneous transplant	7/11/28	11/11/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
19	5	Subcutaneous transplant	7/11/28	12/11/28	Negative	Autolysis	Markedly increased cellular activity; hyperplasia
20	5	Subcutaneous transplant	7/11/28	1/18/29	Negative	Autolysis	Markedly increased cellular activity; hyperplasia

* Prostatectomy, 22
† Prostatectomy, 25
‡ Prostatectomy, 24
§ Prostatectomy, 26

TABLE 2.—*Effect of Prostatectomy in Rats*

No.	Age, Mos.	Operative Procedure	Date of Operation	Date of Autopsy	Effect on Animal	Sex Capacity	Breeding	Testes	Vesicles	Comment
1	6	Partial prostatectomy	6/ 9/27	9/14/27	Negative	Unaltered	Normal	Normal	Normal	Muscle weakness of hind extremities noted following prostatectomies
2	12	Partial prostatectomy	7/14/27	9/14/27	Negative	Unaltered	.....	Normal	Normal	
3	12	Partial prostatectomy	7/14/27	10/12/27	Negative	Unaltered	Normal	Normal	Normal	
4	5	Partial prostatectomy	8/ 4/27	9/18/27	Negative	Unaltered	.....	Normal	Normal	
5	5	Partial prostatectomy	8/ 4/27	9/18/27	Negative	Unaltered	.....	Normal	Normal	
6	6	Partial prostatectomy	8/16/27	10/20/27	Negative	Unaltered	Normal	Normal	Normal	
7	6	Partial prostatectomy	8/16/27	10/20/27	Negative	Unaltered	.....	Normal	Normal	
8	6	Partial prostatectomy	8/16/27	11/19/27	Negative	Unaltered	Normal	Normal	Normal	
9	9	Partial prostatectomy	11/19/27	1/24/28	Negative	Unaltered	Normal	Normal	Normal	
10	9	Partial prostatectomy	11/19/27	1/24/28	Negative	Unaltered	Normal	Normal	Normal	
11	6	Partial prostatectomy	6/20/28	6/20/28						
12	12	Partial prostatectomy	6/30/28	6/30/28						
13	12	Partial prostatectomy	6/30/28	6/30/28						
14	4	Partial prostatectomy	7/ 7/28	7/ 7/28						
15	4	Partial prostatectomy	7/ 7/28	7/ 7/28	These animals were immediately killed following their operation; part of the prostate gland was kept as a control and the rest immediately transplanted					
16	5	Partial prostatectomy	7/11/28	7/11/28						
17	5	Partial prostatectomy	7/11/28	7/11/28						
18	6	Partial prostatectomy	7/11/28	7/11/28						
19	6	Partial prostatectomy	7/11/28	7/11/28						
20	6	Partial prostatectomy	7/11/28	7/11/28						
21	6	Partial prostatectomy	7/11/28	7/11/28						
22	9	Complete prostatectomy ..	6/ 9/27	9/18/27	Negative	Unaltered	.....	Normal	Normal	Intraperitoneal transplant, 8/4/27
23	9	Complete prostatectomy ..	6/23/27	11/16/27	Negative	Unaltered	Normal	Normal	Normal	
24	6	Complete prostatectomy ..	6/23/27	9/30/27	Negative	Unaltered	.....	Normal	Normal	Intraperitoneal transplant, 8/16/27
25	6	Complete prostatectomy ..	7/14/27	10/ 4/27	Negative	Unaltered	.....	Normal	Normal	Intraperitoneal transplant, 8/4/27
26	6	Complete prostatectomy ..	7/14/27	11/16/27	Negative	Unaltered	.....	Normal	Normal	Subcutaneous transplant, 8/16/27
27	12	Complete prostatectomy ..	8/16/27	11/19/27	Negative	Unaltered	Normal	Normal	Normal	

Because of the apparent need for additional studies in this field, an investigation was made of the effect of partial and of complete prostatectomy on rats, and of the free transplantation of pieces of prostatic tissue into normal rats and into rats after complete prostatectomy.

Both young and fully mature rats were employed in these experiments. Three series of experiments were conducted. The sites chosen for transplantation were different, in order to eliminate any possible local influence. In the first series, the prostatic tissue was implanted subcutaneously in the abdominal wall, in the second series intraperitoneally and in the third series within the scrotum, the transplant being sutured to the tunica vaginalis. After varying periods of time, the transplants and also the prostate glands were removed and sectioned and the changes noted.

When prostate gland tissue was transplanted, regardless of the location, autolysis of the transplant took place, with secondary changes in the prostate gland. The prostates of all the animals that had received transplants showed the appearance of a greatly increased cellular activity with hyperplasia of the cells in the gland.

Whether this increased activity is transitory or permanent, we are as yet unprepared to say; however, this condition has persisted in animals with transplants for a period of six months, without any signs of atrophy during this interval. An investigation is now being conducted to determine whether or not atrophy

* This work was conducted at the Nelson Morris Institute for Medical Research of the Michael Reese Hospital at the suggestion of Dr. Irwin S. Koll.

may follow eventually after this first stage of hypertrophy. The results indicating hyperplasia of the cells of the prostate might be of some significance in explaining the clinical condition that is known as prostatic hypertrophy. Since there is no explanation of the cause of this condition, it would appear that this is a profitable field for further investigation.

Fig. 1.—Section of normal prostate gland of white rat (young). Attention is called to the coagulating gland alveoli and glandulae seimales in the lower left corner. Slightly reduced from a photomicrograph with a magnification of 45 diameters.

Fig. 2.—Section of prostate gland from animal with subcutaneous transplant. Note the alveolar distention and secretion, and the hyperplasia of the cells, with villi formation even in the distended state. Slightly reduced from a photomicrograph with a magnification of 40 diameters.

I am conducting a series of experiments at present to observe whether the results obtained after transplantation of the prostate can be caused also by means of injections of prostatic gland extract and by feeding dried prostatic substance.

It is to be borne in mind that the total number of animals studied in the present investigation was rather small; nevertheless, some interesting data were furnished as a result of these experiments that warrant further study.

No attempt is made to draw any conclusions or deductions as to the importance or possibilities of these experiments, but the investigation is being continued along the lines indicated.

DIURESIS IN DOGS FROM NEUTRALIZED ALKALINE EXTRACTS OF THE ANTERIOR HYPOPHYSIS*

HAROLD M. TEEL, M.D.
BOSTON

During routine blood and urine studies on dogs which were being given daily injections of extracts containing the growth promoting principle of the anterior hypophysis, it was noted that some of the extracts exerted a marked diuretic action. In one dog weighing 18 Kg., the twenty-four hour urine output during the control period was approximately 750 cc. When injections were begun, the output rose to 7,300 cc. in the second twenty-four hour period and remained above 5,000 cc. for a week of observation. The daily output in another animal rose from an average of 800 cc. to 3,000 cc. Several other instances of this effect were encountered incidental to other observations.

I was impressed with this extreme diuretic effect, and experiments were planned under conditions more suitable for the study of water metabolism, in which the twenty-four hour water intake and urine output were accurately measured, and the specific gravity of the mixed twenty-four hour urine specimens was taken. In order to have a minimum of modifying factors, the dogs were fed on a constant amount of a synthetic diet for some days before the experiment began and throughout the period of observation.

EXPERIMENTS

Two dogs were placed in metabolism cages for observation. The food, a modification of Cowgill's synthetic diet for dogs,[1] consisted of the following:

Casein	6.3	Gm.	Normal calcium phosphate ($CaHPO_4 \cdot 2H_2O$)	0.021	Gm.
Sucrose	5.84	Gm.			
Lard	2.83	Gm.	Calcium carbonate	0.250	Gm.
Butter fat	1.17	Gm.	Potassium chloride	0.0192	Gm.
Agar	0.400	Gm.	Potassium iodide	0.0013	Gm.
Sodium chloride	0.105	Gm.	Ferric citrate	0.005	Gm.
Magnesium citrate	0.0905	Gm.			
Potassium dihydrogen phosphate	0.0336	Gm.			

This mixture, which constituted the unit of food per kilogram of body weight, was fed once a day and was eagerly eaten. Vitamin B was supplied by adding 100 mg. of a yeast vitamin powder to the daily ration. The dogs were permitted to drink as they desired from a measured volume of water. On this regimen the animals remained in good condition, and the body weight was kept practically constant.

After the diet had been continued for one week, measurements of water intake, urine output and specific

* From the Laboratory for Surgical Research, Harvard University Medical School.

1. Cowgill, G. R.: J. Biol. Chem. **56**: 725 (July) 1923.

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gravity were made for a control period of seven days, and injections were begun.[2] The dose was 25 cc., given parenterally, once a day. The results of this type of experiment are shown in the accompanying charts.

It may be seen from the charts that, in the case of dog 168, the twenty-four hour output was fairly high during the control period while the specific gravity lay between 1.010 and 1.014, which is unusually low. Injection of the hypophyseal extract tripled the output and the specific gravity fell to 1.003. The effect is much more strikingly shown in the case of dog 169. The average twenty-four hour output of urine during the control period was small and the specific gravity of around 1.065 was high, although not pathologically so for dogs. Injection of a like amount of the same extract received by the other animal resulted in a tenfold increase in the twenty-four hour urine output, while the specific gravity also fell to 1.003. In two additional experiments in which the animals were on a routine diet consisting largely of meat the urine output has increased tenfold, or over, following injections.

The charts of dogs 168 and 169 show, furthermore, that the maximal diuretic effect was not reached until the third or fourth day of injection, and, in the case of dog 169, the urine volume and specific gravity did not reach levels comparable with the control period until the third day following the last injection. The former observation is in accord with the results of other experiments performed in the period immediately following injections and mentioned later on.

In several animals, two-hour catheter specimens of urine were taken before and for six to eight hours following injection. In no case was there any significant increase in the urine volume during this period. This result, beside demonstrating a latent period between injection and diuresis, also strongly suggests that the effect is more in the nature of a specific one, and not due to the salt concentration of the extract, which, it may be added, is practically isotonic.

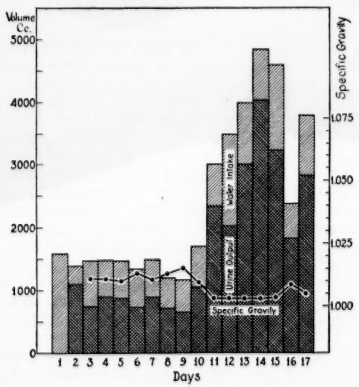

Chart 1.—Diuretic effect of alkaline extracts of the pituitary anterior lobe on dog 168, female, weight 17.1 Kg., in which 25 cc. of growth extract was injected daily.

2. The anterior lobe extracts used were neutralized alkaline ones of the general type first reported by H. M. Evans (Harvey Lectures, 1923-1924) and H. M. Evans and M. E. Simpson (Antagonism of Growth and Sex Hormones of Anterior Hypophysis, J. A. M. A. **91**: 1337 [Nov. 31 1928]). These were also described in a previous communication from this laboratory by T. J. Putnam, H. M. Teel and E. B. Benedict (Am. J. Physiol. **84**: 157 [Feb.] 1928).

COMMENT

I do not wish to draw the inference that the diuretic effect described is necessarily associated with the growth promoting principle. Only a part of the extracts prepared have produced the diuresis. Further, some of the preparations that definitely stimulate growth are inert as regards their effect on the urine output.

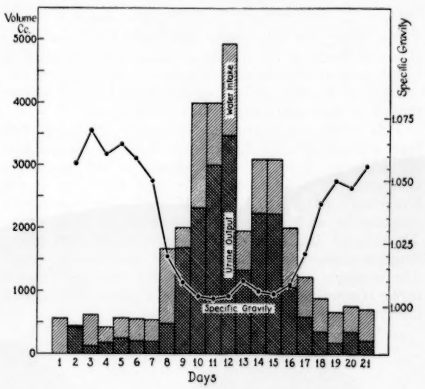

Chart 2.—Diuretic effect of alkaline extracts of the pituitary anterior lobe on dog 169, male, weight 14.94 Kg., in which 25 cc. of growth extract was injected daily.

As yet attempts to devise a method of extraction that uniformly produces the diuretic effect have failed. Most of the extracts are potent in which the ground anterior lobe tissue is extracted with four or five volumes of water to which tenth-normal sodium hydroxide is added in amount equal to, or slightly in excess of, the weight of the tissue, with subsequent neutralization with dilute acetic acid.

The possibility exists that the apparently inert preparations owe their inactivity to the adventitious presence of small amounts of posterior lobe principle which might have diffused into the anterior lobe before the two lobes were separated.

The presence of a diuresis-producing substance in the hypophyseal anterior lobe, if it proves on further investigation to be specific, may have some bearing on the mooted subject of the pituitary polyurias.

The Family Doctor and Cancer.—The position of the family doctor is a most important one in regard to cancer. It is to him that as a rule the patient first applies. Some malignant growths can be readily diagnosed, and that being done the responsibility is his to see that the patient receives the benefit of the most enlightened care known for that particular condition. In case of doubt, there should exist that attitude of mind which will prompt the physician without delay to refer his patient to the right quarter. It seems certain that to bring about a material reduction in the mortality from cancer in early and doubtful cases, the family physician occupies a strategic position. It is natural for the physician to hesitate to take a course which might prove him to be an alarmist. There is an unfailing rule, which the true physician never fails to observe. It is that the patient's life is the only consideration.—Harrington, A. H.: President's Address, *Rhode Island M. J.*, July, 1929.

MYCOLOGY OF INTESTINAL CANAL IN PORTO RICO AND ITS RELATION TO TROPICAL SPRUE

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My object in this study has been to classify the common fungi of the intestinal canal in Porto Rico in health and in disease and to establish the relative frequency of *Monilia psilosis* in the normal bowel and in that of persons suffering from tropical sprue.

This work was begun in November, 1924, and has been carried steadily forward to date by myself and my assistant, Miss L. M. Dalmau, in the mycologic laboratory of the School of Tropical Medicine of the University of Porto Rico, which is functioning in cooperation with Columbia University of New York. The clinical data have been confined to my own cases; diagnosis, observation and treatment have been personal. The majority of these patients have not been treated in the hospital but have been seen at more or less regular intervals, generally once a week.

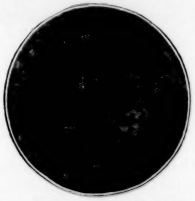

Fig. 1.—Emboli of Monilia psilosis, yeast and mycelial form in the kidney of a guinea-pig dying of moniliasis septicemia; Weigert-Gram stain.

Fig. 2.—Yeast stage of Monilia psilosis, unstained, showing round form, high degree of refraction and fat globules; 1/12 Zeiss lens.

Fig. 3.—Yeasts and hyphae, Monilia psilosis.

The original intention was to assemble data from cultures of the feces of 1,000 persons, but the immense amount of labor involved has limited this number to 872, of whom 280 had clinical sprue, 288 the syndrome of nutritional unbalance of Porto Rico and 126 diseases foreign to the two preceding; 178 were healthy boys from a charity school in San Juan.

TABLE 1.—*Pure Cultures*

Monilia psilosis	263
Monilia parapsilosis	183
Monilia krusei	43
Other species	22
Mycoderma pulmoneum	39
Oidium brasiliensis and other species	66
Torula	83
Saccharomyces	23
Fungi still under investigation	59
Total	781

Cultures of the feces of these patients were prepared according to a technic to be described in a forthcoming paper,[1] and pure cultures were submitted to differential methods. In few instances was less than a month consumed in arriving at a decision as to their taxonomic position. Mainly by their macroscopic characteristics in Sabouraud dextrose agar slants, sugar fermentation tests and gelatin stab, and by microscopic examination of bouillon cultures, hanging drop and Sabouraud agar plate cultures, under high and low power lenses, was a decision reached, at times reinforced by special methods, such as vital staining and animal experimentation.

Exclusive of the group of 178 healthy boys, 1,201 cultures were made from the feces of 694 sick persons. Of these, 420, or 36.9 per cent, were negative for fungi. The remainder yielded pure cultures of the various organisms listed in table 1.

TABLE 2.—*Percentage Relation in Two Hundred and Eighteen Pure Cultures*

	Per Cent
Monilia psilosis	24.3
Monilia parapsilosis	22.9
Monilia krusei	8.2
Other species	2.3
Mycoderma pulmoneum	9.6
Oidium brasiliensis and other species	12.3
Torula	11.9
Saccharomyces	5.0
Fungi still under investigation	3.2

We made a much more intensive study of all fungi recovered in the last 184 cases of this series, availing ourselves of the perfected technic heretofore mentioned, and the results can be briefly cited as indicating the relative frequency of intestinal fungi in Porto Rico. Of these cases, seventy-four were of tropical sprue, of which 52.7 per cent were positive for *Monilia psilosis*. The total number of specimens of feces grown in culture was 210; of these, 17.6 per cent were negative. Of the 218 pure cultures obtained from the remainder, the percentage relation is given in table 2.

As in this series of 694 sick persons an abnormal percentage of cases of sprue deforms the picture, the results so far cited may be compared with those obtained by a census of fungi made from the feces of 178 supposedly healthy boys from the charity school (table 3).

Table 3 shows 55.6 per cent of negative cultures, instead of 17.6 per cent, seen in 184 persons suffering chiefly from tropical sprue, or the digestive vagaries due to an unbalanced ration. It may be added that 5.6 per cent of the healthy group were carriers of *Monilia psilosis*, as against 52.7 per cent of the seventy-four patients with sprue found among the 184 sick.

Thus one can conclude that when the fungi as yet unclassified are omitted, together with those unfamiliar species of *Monilia* and *Oidium* as yet not given rank, 95.3 per cent of the mycologic denizens of the intestinal canal in Porto Rico fall into five genera and about one dozen species.

1. Dalmau, L. M.: Observations on Mycological Technique, to be published in a brochure of research work accomplished in the School of Tropical Medicine of Porto Rico for the period 1925-1928.

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A few words are needed in commenting on the intestinal fungi so far referred to:

Monilia psilosis Ashford, 1914, has been already sufficiently described by myself and by others, but it is well to insist again on the fallacy of trusting too much to sugar fermentations in establishing the specificity of fungi. This statement, however, does not deny to fermentation tests their great value in adding to the sum total of evidence that distinguishes one sugar-fermenting organism from another. The fact remains, nevertheless, that by exposure to ultraviolet rays, and even to sunlight or sheer old age, *Monilia psilosis* can be made to lose its power permanently for the fermentation of maltose, and simulate in other respects *Monilia parapsilosis*. For this reason, the suspicion was once entertained that the latter organism might turn out to be merely a permanent variant of *Monilia psilosis*.

Again, quite frequently, *Monilia psilosis* will fail to produce gas in a sugar which, if sugar fermentation tests are to be considered the principal criterion of specificity, should almost infallibly ferment, and on subculture regain its suspended function. This would not be so bad if the reverse did not occur, and such a phenomenon crops out by no means infrequently. Irregularity in the fermentation of saccharose and galactose by this organism is well known and, most

TABLE 3.—*Census of Fungi Made from the Feces of One Hundred and Seventy-Eight Healthy Boys*

Monilia psilosis	10
Monilia parapsilosis	18
Other fungi, chiefly Saccharomyces, Torula, Oidium and Mycoderma	51
Negative of all fungi	99
Total number of cases	178

disconcerting of all, although much less frequent, it is found also in the case of maltose, which should be our sheet anchor.

It is probably for this reason chiefly that we have been unable to recognize any of Castellani's species of *Monilia* save *Monilia krusei* among our large number of cultures, although we admit the possibility that none of them exist in Porto Rico. Indeed, of late, in order to guard against the erratic behavior of some of our strains, we have become more and more dependent on microscopic examination of plate cultures, pathogenicity in animals, macroscopic appearance on Sabouraud slants and in giant cultures, and even the morphology of the growing organism itself.

Notwithstanding these comments, in order to adhere to a fixed standard in this series, we have excluded from a diagnosis of *Monilia psilosis* all organisms that failed to ferment maltose and to present all of the characteristics that they should otherwise possess, morphologically and culturally, especially with regard to hanging drop and plate cultures. We feel that every culture diagnosed by us as *Monilia psilosis* is quite indistinguishable from every other to which we have applied this designation, and that they together form a homogeneous whole, distinct from any other mycologic entity.

Monilia parapsilosis Ashford, 1927, once suspected of being a permanent variant from *Monilia psilosis*, has finally become in our eyes a distinct species. Its appearance on Sabouraud agar slants is quite similar to that of *Monilia psilosis;* it always ferments dextrose and levulose, and it is often found in the human intestinal tract in symbiosis with it, but in this case it is consistent: it obstinately refuses to ferment maltose. It

TABLE 4.—*Syndrome of Nutritional Unbalance (Two Hundred and Eighty-Eight Cases)*

	Total	
Digestive Tract	Number	Per Cent
1. Tongue		
a. Normal	200	69.4
b. Subjective soreness	27	9.3
c. Tip and edges excoriated	55	19.1
d. Raw tongue	6	2.0
	288	
2 and 3. Gastric Dyspepsia and excess Intestinal Gas		
a. Not noticeable	39	13.5
b. Moderately severe	205	71.1
c. Marked and severe	44	15.2
	288	
4. Diarrhea		
a. Absent	123	43.9
b. Slight	63	21.9
c. Definite but not typical	55	19.1
d. White, frothy, typical	43	14.9
	287	
5. Constipation, chronic, or alternating with diarrhea		
a. Absent	77	27.4
b. Moderate	152	54.1
c. Severe	52	18.5
	281	
7. Liver		
a. Size normal	36	20.4
b. Reduction in size	108	61.3
c. Marked reduction in size	32	18.1
	176	
8. Nausea		
a. Absent	155	56.1
b. Present	121	43.8
	276	
9. Vomiting		
a. Absent	221	78.0
b. Occasional vomiting	54	19.0
c. Frequent vomiting	8	2.8
	283	
12. Anorexia		
a. Appetitie unaffected	101	36.2
b. Partial anorexia	145	51.9
c. Complete anorexia	33	11.8
	279	
Other Phenomena		
2. Asthenia		
a. Absent	47	17.1
b. Present	214	78.1
c. Marked	13	4.7
	274	
3. Insomnia		
a. Absent	114	41.8
b. Present	158	58.0
	272	
4. Muscular Pains		
a. Absent	76	27.8
b. Present	178	65.1
c. Severe	19	6.9
	273	
6. Depression of Spirits		
a. Absent	60	22.3
b. Present	209	77.6
	269	
7. Numbness of Extremities		
a. Absent	114	42.5
b. Present	147	54.8
c. Marked	7	2.6
	268	
9. Tetanoid Cramps, Muscles		
a. Absent	136	51.3
b. Present	104	39.2
c. Marked	25	9.4
	265	
Pigmented Areas of Skin		
a. Absent	100	50.0
b. Present	89	44.5
c. Marked	11	5.5
Loss of weight, average, pounds	208	16.2
Average percentage hemoglobin	120	69.1

produces in gelatin stab a much more compact, firlike branch to the inverted tree, and it possesses morphologically a smaller, more oval blastospore and a more delicate and branched mycelium, although irregularity in size and shape of its growing elements is quite typical.

Above all, after persistent attempts to kill guinea-pigs and rabbits both by subperitoneal and by intravenous

inoculations, using sixty-five strains, we have come to the conclusion that it is nonpathogenic for those animals, in marked contrast to freshly isolated, virulent cultures of *Monilia psilosis*.

Lastly, microscopic inspection of plate cultures reveals a shorter, more bushy mycelial tuft whose attached blastospores are small and distinctly oval. Its presence in the intestinal canal, however, will deviate

TABLE 5.—*Distribution of Monilia Psilosis in Eight Hundred and Seventy-Two Cases*

Group	Number of Cases	Number of Cases with M. Psilosis	Percentage with M. Psilosis
Sprue	280	155	55.3
Nutritional unbalance	288	19	6.6
Other diseases	126	6	4.7
Healthy controls	178	10	5.6
Total cases	872		

the complement when the antigen used is composed of killed cultures of *Monilia psilosis*, and for this reason, more than any other, we have definitely abandoned this diagnostic procedure.

Monilia krusei Castellani is a well known organism and is best revealed by microscopic examination of young plate cultures. We had noted the extremely vivid picture of a verticillate which it presented, and had already approximated the organism to *Enantiothamnus*, when we were further confirmed in our suspicion by Dr. R. Ceferri, director of the agronomic station of the Dominican Republic, an accomplished mycologist visiting us at the time, who independently averred it to be a species of this genus. Indeed, on this score, *Monilia psilosis* gives a strong suggestion of belonging to the same genus as well, but I have left both as they are until there is further confirmation of these suggestions.

The Oidia are generally indistinguishable from *Oidium brasiliense*, cultures of which we received from the Institute Oswaldo Cruz, thanks to Dr. Rocha-Lima. There are, however, in this group strains that differ sufficiently from our type cultures to invite a more intense research, already begun by Dr. Ceferri and ourselves. One of these varieties produces in its growth on Sabouraud agar very beautiful concentric circles, a formation sustained by similar lines in puffball masses when the organism is sown in sugar bouillon.

The distribution of *Monilia psilosis* in the general total of 872 cases is summarized in table 5.

In justifiable explanation for the failure to find *Monilia psilosis* in 125 cases of sprue, apart from the fact that as a rule but one culture was made and frequently solid stools had to be accepted, as our patients were usually outpatients, the following data regarding eighty-four cases should be taken into consideration:

Twenty-nine were patients in profound cachexia when first seen, and in such a state *Monilia psilosis* is as likely to be absent as not.

Seventeen were in a state of relapse from a former attack of sprue in which we had identified *Monilia psilosis*.

Thirty-eight had been for a month or much more on a sprue diet, either before consulting the physician or before he was able to obtain a specimen of their stool.

SPRUE

Sprue is believed to be due, fundamentally, to a nutritional unbalance on which is superimposed *Monilia psilosis* to develop the picture that is recognized, the world over, as a clinical fact. Many factors seem to contribute to bring about the basic, the all-important underlying condition. Climate, embracing continued high temperature, excessive humidity, and, probably, excess of certain light rays, may be a nonessential although aggravating factor, but the great outstanding one is excess of carbohydrates and fats in the food consumed and consequent diminution in the vital food accessories, as well as an inadequate supply of certain amino-acids. The fatal tendency of practically all tropical peoples is toward a high calory diet, instinctively to flog an enervated body into a velocity neither sane nor possible for the warm climates. A relative failure of digestive glandular activity follows from overstimulation, especially of the liver and pancreas, and of the lipase and amylase function. The result is inadequate digestion of starch and fat; increase in intestinal acidity and acid-producing and gas-producing micro-organisms in a sugar-enriched medium; destruction of fat by bacteria; often a reduction in the calcium content of blood serum, and a progressive failure of nutrition, which falls most heavily on that glandular system, both digestive and endocrine, on which nutrition and perfect metabolism so largely depend.

TABLE 6.—*Sprue, Severe and Cachectic Grades Combined (One Hundred and Ninety-Three Cases)*

Digestive Tract	M. Psilosis: Positive Number	Positive Per Cent	Negative Number	Negative Per Cent	Total Number	Total Per Cent
1. Tongue						
a. Normal	8	9.5	5	4.5	13	6.7
b. Subjective soreness	7	8.3	6	5.5	13	6.7
c. Tip and edges excoriated	22	26.1	31	28.4	53	27.4
d. Raw tongue	47	55.9	67	61.4	114	59.0
	84		109		193	
2 and 3. Gastric Dyspepsia and Excess Intestinal Gas						
a. Not noticeable	1	1.1	1	0.9	2	1.0
b. Moderately severe	55	65.4	71	66.1	126	65.2
c. Marked and severe	28	33.3	37	33.9	65	33.5
	84		109		193	
4. Diarrhea						
a. Absent	3	3.5	4	3.6	7	3.6
b. Slight	6	7.1	3	2.7	9	4.6
c. Definite but not typical	4	4.7	8	7.3	12	6.2
d. White, frothy, typical	71	84.5	94	83.2	165	85.4
	84		109		193	
5. Constipation, chronic, or alternating with diarrhea						
a. Absent	34	40.4	28	34.8	72	37.3
b. Moderate	43	51.1	65	59.6	108	55.9
c. Severe	7	8.3	6	5.5	12	6.7
	84		109		193	
7. Small liver						
a. Size normal	5	8.0	3	3.8	8	5.7
b. Reduction in size	34	54.8	42	53.8	76	54.2
c. Marked reduction in size	23	37.0	33	42.3	56	40.0
	62		78		140	
8. Nausea						
a. Absent	29	34.5	44	41.5	73	38.4
b. Present	55	65.4	62	58.4	117	61.5
	84		106		190	
9. Vomiting						
a. Absent	46	54.7	59	55.1	105	54.9
b. Occasional vomiting	34	40.4	41	38.3	75	39.2
c. Frequent vomiting	4	4.7	7	6.5	11	5.7
	84		107		191	
12. Anorexia						
a. Appetite unaffected	18	21.6	24	22.2	42	21.9
b. Partial anorexia	44	53.0	59	54.6	103	53.9
c. Complete anorexia	21	25.3	25	23.1	46	24.0
	83		108		191	

Only with this pathogenesis in mind can one reconcile to science the queer phenomenon presented by a disease which, if it does not entirely limit itself to scourging those who can choose their food, certainly seems by preference to seek out the well-to-do and the intellectual.

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Of the 288 patients with the syndrome of nutritional unbalance in Porto Rico, 268 were town dwellers; of the total number, only fourteen were not able to choose their food. Of 280 persons suffering from sprue, 257 were town dwellers and 262 were able to select their food. In Porto Rico the poorly fed live in the country, and from this class for many years has come the highest morbidity.

While these are not all the elements which combine to degrade the digestive function in the tropics, but which for lack of space must be passed over, there is one more factor that at times is so potent as to seem to be the only cause, at least to the lay mind, for the sad train of ills which this preeminently tropical state brings; this is exhaustion, physical or mental. Exhaustion may be induced by late hours, excessive emotional excitement, lack of healthful outdoor exercise, overexertion, too frequent pregnancies, too prolonged lactation, and, above all, fear, worry and brain fag, which constantly inhibit or interrupt the activities of the digestive organs and sap one's vitality. Sprue is preeminently an exhaustion process.

Into the sweet, fermenting, acid bowel is sown the omnipresent *Monilia psilosis*, and there in its preferred medium it colonizes, instead of passing out, as in health it seems to do, without effecting any serious foothold. How much or how little it may do toward painting the familiar picture seems to be as yet a question, but of the following conclusions one may be fairly sure:

1. *Monilia psilosis* is a pathogen; if it is not, then neither is *Monilia albicans*.

2. *Monilia psilosis* abounds in the intestinal canal of the patient with sprue until, in the cachectic forms of the disease, the reaction of the bowel becomes radically changed, or the intake of improper food is checked, often too late for digestive glands that have finally become impotent.

3. *Monilia psilosis* tends to pass from one to another of the same family who eat the same food and are suffering from the same food unbalance.

4. Sprue relapses in northern countries, where it is practically unknown, after long periods of a corrected dietary, or, indeed, may even develop for the first time months or years after the subject has left the tropics.

5. Even in certain tropical countries of large extent, where probably a number of cases of a similar syndrome of food unbalance exists, sprue seems to be at least a rare disease.

I have endeavored to trace in the accompanying chart the clinical story and the nutritional disturbance that usually precedes it. The only serious difference between the two curves lies in the portion representing the tongue and bowel symptoms. Otherwise, the upper falls accurately over the lower, as a veritable mantle, cut one size larger for the wearer.

There are a few fallacies, however, which might spring from too literal an interpretation of this chart: While 85 per cent of the patients with sprue presented varying degrees of a sore tongue, nevertheless 31 per cent of those with the syndrome of food unbalance are shown to suffer from the same symptom. The same incongruity appears when the lines rise to express the percentage of patients suffering from diarrhea; for sprue, 92 per cent, but nevertheless for the syndrome of food unbalance more than 55 per cent. But a simple graph cannot express the degree or the intensity of a symptom. The fact of its existence or nonexistence must be expressed in precise terms. As a matter of fact, the degree of soreness of the tongue is far greater in sprue; that of the syndrome is infinitely less. In sprue, diarrhea is a serious, even though, in the light and moderate grades of the disease, usually an intermittent symptom; its character is usually light in color and frothy. In the peculiar syndrome of food unbalance, long intermissions marked by constipation are broken by short periods of what the patient describes merely as "loose bowels," neither typical of sprue nor alarming.

Finally, I wish to leave as clear a conception as possible of the seriousness of this problem for what is now my adopted home. In Porto Rico, the gastro-intestinal disturbances caused by recognized specific infection seem to be much less frequent than in many other tropical lands. An extraordinarily modern and efficient sanitary service, well supplied with money, has greatly reduced chances for food and water borne infections.

The problem is at heart an economic one. The island is small and overpopulated, with 400 persons to the square mile. In order to sustain its large population it must grow for export "gold crops," sugar, tobacco, coffee and fruit. In spite of the active insistence of the governor and the insular department of agriculture, not enough time, energy or interest is devoted by the landowner and his agricultural dependents to raising garden

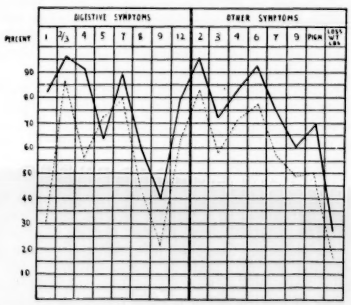

Fig. 4.—Comparison of clinical picture of sprue and its preceding syndrome of nutritional unbalance: solid line, sprue, 280 cases; broken line, deficiency syndrome, 288 cases. Digestive symptoms: 1, sore tongue; ⅔, gastric dyspepsia, excess intestinal gas; 4, diarrhea; 5, constipation; 7, small liver; 8, nausea; 9, vomiting; 12, anorexia. Other symptoms: 2, asthenia; 3, insomnia; 4, muscle pain; 6, depression of spirits; 7, numbness of extremities; 9, tetanoid muscular cramps; *pigm.*, pigmented areas of skin.

produce and dairy products. The result is that, even had the people of the towns a clear idea of the indispensable nature of these foodstuffs, their money could not buy it at reasonable prices in sufficient amounts, nor at a proper level of cultivation.

Popular education alone can exterminate sprue in Porto Rico and with it would go a far greater source of chronic ill health, which, in spite of the tremendous efforts and successes of the Porto Rican people, financial and spiritual, still lies like a pall over them and limits their highest industrial and agricultural development.

Hyperopia and Styes.—The cause of styes may be attributed to a number of conditions. As oculists we are prone to consider styes due in a measure to errors of refraction in a certain percentage of our cases. However, I do not feel that the percentage is as great as some authors would lead us to believe. The careful refraction of many of the cases reveals hyperopia or compound hyperopic astigmatism, which when properly corrected entirely relieves the patient of this most annoying condition.—Ravdin, B. D.: Styes, *J. Indiana M. A.*, August, 1929.

THE MOBILE RIGHT COLON *

W. R. HOUSTON, M.D.
AUGUSTA, GA.

In 20 per cent of persons there occurs, as the result of a fault in embryologic development, an absence of fixation of the ascending colon to the posterior abdominal wall. This absence of fixation may concern the entire right colon or may be limited to the pendulous cecum. The mobility of the right colon is often very great. When examined under the screen, the vertical excursion of the hepatic flexure as between the upright and the recumbent postures may be as much as 6 or 7 inches. It is often possible to push the whole of the right colon over to the left of the spine. Instead of being fixed, the right colon is found to possess a mesentery of varying length and, in addition to the true mesentery, there usually develops a backward continuation and elongation of it, the pseudomesentery, a firm dense structure coming from the fascia of the posterior abdominal wall.

It should be made clear in the beginning that a mobile right colon, however mobile it may be, does not in itself constitute a disease. Yet while it is true that many with a mobile right colon never develop serious abdominal disorders, it is also true that the majority of patients with gastro-intestinal disease are recruited from among those that possess this anomaly.

In analogy with the familiar conception of decompensatory heart failure, loss of compensation is the term employed to designate the transition from a well functioning loose right colon to one associated with a morbid physiology. This decompensation is apt to occur in early adult life. It is seen more often in young women. What is its mechanism? The British authors put most stress on the action of gravity. It may be influenced by the firm establishment in the cecum of noxious strains of bacteria. Since the left and pelvic colon may be regarded as the seat of tonic spasm, with its attendant constipation, and the right colon and cecum as the seat of absorption, it is clear that such a constitutional aptitude to spasm as will lead to a spastic left colon will favor also a damming back of absorbable matter in the cesspool of the cecum.

The symptoms of decompensation are varied. The most common type is that showing pain in the lower right quadrant. The gastric symptom complex often dominates. In other cases the symptoms simulate gallbladder disease or a renal drag. In a number, asthenia or psychoneurotic states are in the foreground.

Looking back over the successive waves of assault on this difficult problem, as they have arisen in the past twenty-five years, one may recall the era of nephropexies—much in the foreground of practice and discussion at one time. Then came Longyear's book on nephrocoloptosis in which he emphasized the importance of the nephrocolic ligament and showed the futility of anchoring the kidney without fixing the colon. Coffey has since shown that this nephrocolic ligament is not present when the colon is normally fixed but is an acquired band arising through the tension produced by the mobile colon. It was about this time that I read Rovsing's discussion of the types of ptosis and his daring efforts at intra-abdominal reconstruction. In 1912 I was much impressed by Coffey's studies of the spatial relations within the abdomen and the abdominal psoas shelf. The surgical therapy which these men proposed seemed to me too ambitious for general application. In the same decade, much was heard of the bands and membranes about which discussion was so widespread later, whether they were congenital, inflammatory or otherwise acquired and a resultant of the pull of gravity. After the discovery of these bands there was quite a flutter of articles about cures to be made by cutting them. Arbuthnot Lane, moreover, in addition to familiarizing physicians with his kink, through his massive colectomies familiarized them with the notion of how little the colon was indispensable to human physiology.

All these studies, however, belonged to the realm of surgery. I was a medical man, and my interest in them from the therapeutic standpoint was languid. The problem as I saw it was not what surgery can be carried out on ptotic patients, but how to cure them. I was the less interested because I felt I was getting on pretty well as a therapeutist. My therapeutic armamentarium was of a great simplicity. It consisted chiefly in fattening thin people. I formulated directions for gaining weight. If the patient had no appetite, he was told that eating would give it to him. If he experienced discomforts after eating, he must still eat because as he gained in weight his discomforts would disappear. If the symptoms were grave, the patient was kept recumbent. The list of therapeutic procedures employed need not be detailed, but I may add that they were always supported by psychotherapy, and by psychotherapy I mean nothing more subtle than the bringing to bear of such persuasive pressure and of such encouragement as will induce weak and wavering spirits to carry out a systematic treatment. Not many of my patients were rich enough to have a formal Weir Mitchell rest cure, yet by marshaling such resources as the social setting offered we managed to come out fairly well.

But my therapeutic efforts were not all successes. Some patients lacked constancy, some lacked intelligence, some lacked money—or time, which is money. Some were cured and soon suffered a relapse—were cured again and had another relapse. The case I now report was a total failure.

It was in 1920 that I was called to a patient, the study of whose sickness was to result in greatly broadening my knowledge of the pathogenesis and treatment of abdominal disorders:

Miss E. M., aged 20, a tall, graceful, vigorous, high-spirited girl, not markedly of enteroptotic habitus, who had always been well, not constipated, and fond of outdoor exercises, while in France acquired an acute diarrhea that lasted a week. After this she was never well. I saw her on her return. She was pale, her eyes had a yellowish cast, her skin was muddy. She had no appetite, and she was very uncomfortable after eating. Gastric acidity was low, and constipation marked. There was great tenderness over the cecum. Her most distressing symptom was a profound asthenia. Though her eyes were normal to tests, she could not read without pain. She had constant headaches and insomnia. All my most trusted therapeutic procedures failed to help her.

A consultant advised appendectomy. At the operation there was disclosed a perfect example of Jackson's membrane sweeping over the whole ascending colon. The appendix was definitely pathologic. Its removal, however, brought no alleviation of symptoms. Months dragged on. In the meantime, Mr. Waugh's report of his operation for colopexy with a record of 180 illustrative cases had appeared in the *British Journal of Surgery*. My colleague, Dr. Crane, had tried the operation on a working woman, in whom a previous appen-

* Read before the Section on Practice of Medicine at the Eightieth Annual Session of the American Medical Association, Portland, Ore., July 10, 1929.

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dectomy had been performed without relief, and who soon after the operation was well and back at work. He suggested our attempting it here. The advice of an eminent consultant was sought. He thought that plastic operations in the abdomen were inadvisable and that surgery for neurasthenic patients was to be avoided. Hence attempts to revise the medical management were made, but unavailingly. Finally the family rather insisted that we try this new operative method. The convalescence from the operation was slow but steady. After a year of invalidism the patient regained finally all her former vigor and has never been sick since.

Since that time 145 colopexies have been done in our clinic. These operations were carried out on only a very small proportion of the patients that had a mobile right colon. Twenty patients had had a previous appendectomy; some had had cholecystectomy, removal of a right ovary, or an operation for adhesions. There has been no operative mortality in the series. On the whole, the results have been satisfactory—considerably more satisfactory than, for instance, the ordinary plastic operations of gynecology. Some patients, particularly those whose condition simulates chronic appendicitis, are immediately relieved of pain. Others in whom the neurotic habit is well established will require considerable postoperative medical management. After the colon is fixed, however, the medical management is easier. The tendency to relapse after a cure is greatly lessened. Dyspeptic symptoms disappear. The pains that simulate gallbladder or duodenal disease subside. The asthenia is more readily combated.

As to the mechanism by which these improvements are brought about, fascinating as the question is, I must forego its discussion. The subject is too big. If the reader will refer to Waugh's original essay on his 180 cases in the *British Journal of Surgery*, to McConnell and Hardman's essay in the same journal on their work in Dublin and again, in the same journal of last year, to Carslaw's long article reporting 242 cases of colopexy as studied in Glasgow, and, further, if he will familiarize himself with Coffey's studies on the same subject in his comprehensive monograph, he will in the first place be vastly entertained and instructed and, should he push his study to the point of practical investigation, he will find that his perspective on gastrointestinal interrelationships will undergo a great change. He may feel that the British have overvalued mechanistic factors and undervalued psychoneurotic factors. He may grow suspicious of the too great clarity and precision of their reasonings, of a certain schematic dogmatism in their utterances. But he will inevitably develop from the prosecution of his studies a new conception of the interlocking of the abdominal mechanisms.

Alluring as is the study of such questions and fruitful as it may prove, there can be no effort at an exposition of them here—merely a statement of how urgently they demand consideration. If one reviews the rather chaotic and floundering papers that come from gastroenterologic sources nowadays, attempting to fix definitely the pathogenesis of morbid physiology in the abdomen, one will see that interest is shifting from the gastric symptom complex to an anxious questioning of the rôle of the colon, on which attention is now focusing. It is distressing to envisage the paucity of sure knowledge about the colon, to realize how many unanswered questions still confront us.

But if, as realists, we face the raw facts of our actual situation in the practice of medicine, we find that what must first be settled is the question of chronic appendicitis.

The leaders of the profession, both medical and surgical, have for some years been trying to stem the tide of operations for so-called chronic appendicitis. If the pathologist is disposed to be generous to the surgeon's diagnosis, he may find one appendix that is chronically inflamed to every two that are acutely inflamed. The ratio was actually found to be 1 to 3 in a series of a thousand cases studied in our university laboratory. But along with these there were sent to the pathologist during the same period of years 2,600 appendixes in which there was no pathologic change. The proportion of healthy appendixes to the chronically inflamed was 10 to 1. If one discards from consideration the larger part of these normal appendixes as having been removed in the course of other operations, and also a certain proportion that were taken out by the surgical "confidence man" who is attracted by the lucrative facility of an appendectomy, there still must remain a large number of appendectomies that were done in honest error. The error arises through a lack of knowledge of the pathologic physiology of the mobile colon.

Most of these patients might have been successfully treated medically. A small proportion probably required surgical treatment. The French authors De Martel and Antoine, in their monograph on pseudoappendicitis, find fault with Waugh's operation on the ground that it is so little radical that any one who could be cured by it could be cured without it. In my experience this is not quite true. Some can scarcely be cured without surgery. Many haven't the time or the personality to prosecute a medical cure. There are besides many Americans that crave surgical treatment and if they are denied it will get some thoughtless appendectomist to supply it.

It may now be said of Waugh's operation that it is no longer a one man operation. In the main it is a wise principle to refuse to accept any therapeutic procedure on the sole recommendation of its originator. This one has been confirmed as of value by numerous observers who are both able and disinterested. As a technical procedure the course is well charted. It is not open to the criticism that has been made of peritoneal fixations; viz., that they do not hold. When the anterior longitudinal band of the colon is sutured to the root of the pseudomesentery, it is a sewing of connective tissue to peritoneum, not of peritoneum to peritoneum. When examined after operation, the colon is found to have as much mobility as the normal colon—a vertical play of 2 or 3 inches.

I am not sure beyond a peradventure that this surgical procedure is following the right clue. Our attitude toward the problem must still be tentative rather than cocksure. I can only say that after eight years of observation the results are very encouraging. My impression of the value of this surgical treatment has constantly gained in assurance. Our present knowledge of mobility as a factor in the pathogenesis of right abdominal trouble began with the roentgenologic studies. Our earlier cures by fattening were largely empiric and succeeded through increasing intra-abdominal tension. In studying the colon, it must be recognized that whatever false steps surgeons have taken in the plastic surgery of the abdomen, it seems to have come about that, just as in the case of peptic ulcer, most of the light and leading on this topic have come from the surgeons. As medical men we are often called to advise surgery as the treatment of choice. In the

study of the mobile colon and its morbid sequels we probably need less a jealous guarding of our own camp than a sympathetic cooperation with our surgical confrères.

1345 Greene Street.

ABSTRACT OF DISCUSSION

DR. JAMES S. MCLESTER, Birmingham, Ala.: Dr. Houston's paper recalled to my mind the many so-called gastro-intestinal invalids I have seen, who through a period of years have been subjected to a long series of operations beginning usually with the appendix, all without benefit. As we review the history of such patients it is difficult to escape the conclusion that in many of them a correct diagnosis has never been made. From what Dr. Houston tells us, it would appear that at least some of these unfortunate people suffer from a movable colon, and since this anomaly is easily recognized and readily corrected it behooves us to be on the lookout for it.

DR. MAX EINHORN, New York: I was once at a banquet with Dr. Edebohls, the foremost advocate of nephropexies. He had had much experience. He said to me: "Dr. Einhorn, what do you do with patients who have movable kidneys?" I said, "I treat them and they get well." He was quite astonished by such a remark. At that time, a patient with a floating kidney had to be operated on; otherwise nobody knew what was going to become of him. A little while later I published a paper on that topic, mentioning the fact that floating kidneys as such need not be operated on. It is the same with ptosis of any other organ. An organ can be ptosed and still fulfil its duty quite well. Not only that, but one can readjust the condition without an operation. That means we can put the patient in such a condition that he will not suffer from these organs. An abdominal support and fattening of the patient, with some exercise, will restore the patient to good health, in four or five months, and one may find that the kidney is not movable any more. I have demonstrated this fact and described it in several papers. It is the same with the movable colon. Dr. Houston remarked that Dr. Lane has demonstrated by colectomy that a colon is of no importance; that we can perhaps do without it. I should say rather that he demonstrated that the colon is of great importance and that there are a great many diseases arising after operation. I have seen many patients who had a colectomy done suffering from diarrhea and all kinds of trouble afterward, which really led to an early death. A great deal of suffering has been caused by these operations. I want to warn against too hasty operations. There are all kinds of methods. As to feeding, the problem of diet should not be made too difficult. All living beings exist and they do not know anything about diet. They just get well and lead their existence. Some people who have never had a physician live a healthful life. Some are sick, some are well, but they can go on. That shows that the principles of diet are innate. If we take a food away and tell the patients, "You cannot eat that; you will lead a long life," then we must be quite sure that we give them a better diet, but that is not always done. We should return to the principles of nature. We should not make too radical changes. That would be my advice for everybody. There is a mixed diet which is good for almost anybody. We should not live on meat alone, and we should not live on vegetables alone, as can also be done. I would advise simply that these patients eat, and that they are not dieted too much. A great many people are happy if they are put on a diet, and told to live only on milk, eggs or vegetables. That is all wrong. The right diet is a mixed diet in which everything is contained.

DR. W. R. HOUSTON, Augusta, Ga.: I am indeed glad to accept Dr. Einhorn's correction in regard to what is to be learned from Lane's work. The fact that people live without a colon of course does not mean that they live well. I would certainly dislike to appear as a doctrinaire on this subject. It is worth emphasizing the truth that all physicians must consider the financial element largely in therapeutics. The patient who can afford to have a long, continued rest, long, continued fussing over, is not so outstanding in my practice. I find that people would like to get well at the earliest possible time and get back to work. My observation of the results of this operation is that it makes rehabilitation easier. It hastens and facilitates the restoration of the patient to functional activity. I could cite some highly interesting cases in which operation has been performed a number of times, and in which, also, there have been some reasonably good medical cures, still without relief. These patients were rather strikingly and quickly relieved by a Waugh colopexy. My impression on the whole is that this is a good and useful procedure and one that we should familiarize ourselves with in order to know clearly what its possibilities are.

Clinical Notes, Suggestions and New Instruments

SUDDEN DEATH FOLLOWING THE ADMINISTRATION OF CONCENTRATED PNEUMOCOCCUS SERUM

ALEXANDER M. BURGESS, M.D., Providence, R. I.

D. H., a schoolgirl, aged 14, seen in consultation with her family physician, Feb. 11, 1929, had an unimportant family and past history in which there was no record of infantile eczema, hay-fever, asthma or anything suggesting sensitiveness to horse emanations. The present illness began, February 9, although the patient had been having a "slight cold" for several days previously. The temperature was 99 F. and the pulse rate 100; there was some redness of the throat and some tenderness in the right lower quadrant of the abdomen. February 10, the temperature rose to 101.5 F. and the pulse to 120, and the patient complained of severe pain in the left side of the chest. Examination revealed dulness to percussion and diminished respiratory murmur, and a diagnosis of lobar pneumonia was made which was corroborated by roentgen examination.

When I saw the patient, February 11, the diagnosis was clear. Physical examination at that time revealed dulness, bronchial breathing and fine crepitant râles over the lower lobe of the left lung. In view of the early stage of the process, less than forty-eight hours after the real onset, the use of polyvalent antipneumococcus serum was strongly advised while sputum typing, blood cultures and other investigations were being carried out.

A few hours later the patient was seen again because of an emergency. She had received at 5:15 p. m. 5 cc. of concentrated polyvalent antipneumococcus serum prepared according to the method of Felton and supplied by a reliable manufacturer of biologic products. Through a mistake in directions she had received 15 cc. of the same material at 5:30 p. m., fifteen minutes after the first injection. Immediately after the second injection the patient had become very restless, urticaria had appeared, the pulse had become rapid and weak and the respirations labored, and unconsciousness had supervened. Epinephrine, 1 cc., had been given at 7 p. m. without apparent effect.

When seen at 7:15 p. m., the patient was still unconscious and exhibited an "ashen" pallor. The pulse was thready and too weak to count at the wrist. The cardiac rate was ranged from 160 to 170 beats a minute. Loud wheezing râles were heard all over the chest. Inspiration was quick and free, but expiration was more prolonged. The skin was clammy and covered with perspiration. A diagnosis of acute anaphylactic shock was made and 2 cc. of epinephrine was immediately ordered and given at 7:30 p. m. Following this the patient seemed a little better for a few minutes, but quickly relapsed to her former condition and died at 8:34 p. m. Necropsy was not permitted.

COMMENT

This case is reported to emphasize the caution that is necessary in all intravenous injections of horse serum, including such refined and concentrated products as the one used in this case. Tests for serum sensitiveness should certainly be made in all cases and a sufficient interval should elapse between the initial test dose and the larger therapeutic dose so that warning symptoms may develop if they are going to do so. By far the safest method is to inject the serum intramuscularly, as is generally admitted to be the method of choice in the administration of diphtheria antitoxin in spite of the local reaction and the pain produced.

454 Angell Street.

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Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

EPHEDRINE-LILLY (See New and Nonofficial Remedies, 1929, p. 166).

The following dosage form has been accepted:

Ointment Ephedrine Compound: Ephedrine-Lilly, 1 Gm.; menthol, 0.65 Gm.; camphor, 0.65 Gm.; oil of thyme, 0.375 Gm.; lanolin, 5 Gm.; paraffin oil, 24 Gm.; white petrolatum to make 100 Gm.

EPHEDRINE SULPHATE-LILLY (See New and Nonofficial Remedies, 1929, p. 169).

The following dosage form has been accepted:

Lilly's Ephedrine Jelly: Ephedrine sulphate-Lilly, 1 Gm.; glycerin, 15 Gm.; tragacanth, 1.5 Gm.; eucalyptol, 0.1 Gm.; oil of wintergreen, 0.005 Gm.; oil of dwarf pine needles, 0.005 Gm., water to make 100 Gm.

VIOFORM-CIBA. — Iodochlorhydroxyquinolin. — $C_9H_4N.OH.I.Cl.$—A substitution compound of anachlor-ortho-hydroxyquinoline resulting from the introduction of one atom of iodine.

Actions and Uses.—Vioform-Ciba is used as an odorless substitute for iodoform.

Dosage.—Vioform-Ciba is used as a dusting powder for application to wounds, ulcers, burns, exudative skin eruptions, etc.

Manufactured by the Society of Chemical Industry in Basle, Switzerland (Ciba Co., Inc., New York). U. S. patent 641,491 (Jan. 16, 1900; expired). U. S. trademark 92,732.

Vioform-Ciba is a grayish-yellow, odorless powder, almost insoluble in water, sparingly soluble in alcohol, soluble in hot glacial acetic acid.

Boil vioform-Ciba with dilute hydrochloric acid: it dissolves slowly, evolving an odor of iodine. Treat a specimen of vioform-Ciba with concentrated sulphuric acid: copious vapors of iodine are evolved. Repeatedly crystallize vioform-Ciba from hot glacial acetic acid: crystals are obtained which melt at 178 to 180 C.

Mix about 0.5 Gm. of vioform-Ciba, accurately weighed, in a nickel crucible with a mixture of powdered sodium hydroxide 4 parts and potassium nitrate 1 part, and heat until fusion has been completed. Cool and dissolve the fused mass in 150 cc. of water, warming to hasten solution; filter into a 400 cc. beaker and wash well. Add 25 cc. of tenth normal silver nitrate (the amount of silver is *k* in the formula below); then add slowly, with stirring, nitric acid until acid in reaction to litmus paper. Filter the solution through a weighed Gooch crucible, wash and titrate the excess silver nitrate in the filtrate with tenth normal potassium sulphocyanate (the amount of silver in the filtrate is *a*). The precipitate in the Gooch crucible (consisting mainly of silver iodide with some silver chloride) is further washed with 3 portions of alcohol, then ether, dried at 100 C. and weighed (*w*). The amount of iodine can be calculated according to the formula

$$x = \frac{0.7527\ w + a - k}{293}$$

where *w* equals combined weight of silver iodide and silver chloride; *x* equals weight of silver iodide and (*w*-*x*) equals weight of silver chloride: by this method Vioform-Ciba contains not less than 37.5 per cent nor more than 41.5 per cent of iodine, and not less than 11.5 per cent nor more than 12.2 per cent of chlorine.

I-X BARIUM MEAL.—A mixture of barium sulphate U. S. P., 85 per cent; native aluminum silicate, 10 per cent; malted milk (malt extract-milk powder), 5 per cent; with a trace of saccharin.

Actions and Uses.—I-X barium meal is used for roentgen-ray examinations.

Dosage.—I-X barium meal may be administered orally or by rectum. From 90 Gm. to 120 Gm. (3 to 4 ounces) are mixed with each 250 cc. (8 fluidounces) of water and agitated thoroughly.

Manufactured by the Industrial X-Ray Research Laboratories, St. Louis (Dick X-Ray Company, St. Louis, distributor). U. S. patent and trademark applied for.

MEAD'S POWDERED LACTIC ACID MILK NON-CURDLING, NO. 1, WITH DEXTRI-MALTOSE.—A modified milk product prepared by adding lactic acid, U. S. P., and a maltose-dextrin preparation to whole milk, heating, drying, and powdering. Each 100 Gm. contains, approximately, protein, 18.3 Gm.; lactose, 25.5 Gm.; butter fat, 19.15 Gm.; ash, 4.22 Gm.; lactic acid, 1.75 Gm., and moisture, 1.50 Gm.

Actions and Uses.—Mead's powdered lactic acid milk non-curdling, no. 1, with dextri-maltose, is proposed for use in the feeding of infants when it is desired to prescribe an acidulated milk with a certain amount of added carbohydrate.

Dosage.—From 12 to 40 fluidounces of the normal dilution daily, depending on the age, weight and tolerance of the individual infant. To prepare the normal dilution, add to each 1½ fluidounces of water 1 packed level tablespoonful of Mead's powdered lactic acid milk non-curdling, no. 1, with dextri-maltose and stir into solution with an egg-beater. This dilution contains approximately, protein, 3.32 per cent; carbohydrate, 10 per cent; butter fat, 3.48 per cent; ash, 0.78 per cent, and lactic acid, 0.32 per cent. The finished mixture has a p_H of 4.6 and each fluidounce has a nutritive value corresponding to approximately 25 calories.

Manufactured by Mead Johnson & Co., Evansville, Ind. No U. S. patent or trademark.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, Secretary.

ERGOT PREPARATIONS OMITTED FROM N. N. R.: AN EXPLANATION

In THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 4, 1929, there was published a report by the Council on Pharmacy and Chemistry on certain preparations of ergot which were intended for hypodermic administration. This report stated that the preparations of ergot named had been omitted from New and Nonofficial Remedies for the reason given in the report. The objections to these preparations briefly stated were as follows: that the products named were essentially watery extracts of ergot and that they therefore contained little or none of the specific alkaloids of the drug which have proved valuable in therapeutics; secondly, that with one exception they were not assayed by any method which showed their alkaloid content; and, finally, that examination of each of the preparations by biologic methods which measure alkaloidal content had shown that they were indeed practically devoid of such specific alkaloids. The preparations named were, therefore, omitted from New and Nonofficial Remedies until such time as satisfactory methods of assay and satisfactory standards were adopted as to insure a uniform, potent and satisfactory product.

Inasmuch as there seems in certain quarters to be some misunderstanding of the Council's action, the Council has deemed it wise to amplify the published statement by pointing out that the reasons for omitting these preparations from New and Nonofficial Remedies are exactly as stated in THE JOURNAL and none other. These reasons are based primarily on the mode of manufacture of these preparations as a class, as a result of which, as pointed out, the specific alkaloids of ergot are almost entirely absent from the preparations. This theoretical objection is supported by the biologic observations. The Council wishes to emphasize as strongly as possible that no evidence whatever was found which would indicate that in any case there was adulteration, or that improper ergot had been used in the manufacture of the product. Nor was any preparation found to be unduly toxic. The statement of the action of the Council then as it appeared in THE JOURNAL is complete and is not to be construed otherwise.

Malaria.—The popular impression that malaria, irrespective of the type, is more fatal when contracted in the tropics than in the temperate zones is not true, as estivo-autumnal infection contracted in Texas is just as serious as a similar infection contracted in Central America. The comparatively high mortality rate in tropical malaria is due to the fact that a high percentage of the inhabitants is infected, and from 70 to 90 per cent of these infections is estivo-autumnal—the malignant type; while tertian, a benign type, is the one most frequently encountered in temperate zones and rarely proves fatal, even in children. There is no question that individual susceptibility and resistance are important factors in determining the seriousness of an infection in a given case.—Connor, R. C.: The Problems of Malaria Control in Tropical America, *Texas State J. Med.*, July, 1929.

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SATURDAY, SEPTEMBER 7, 1929

AUTONOMIC IMBALANCE

Recently the expression "autonomic imbalance" has found its way into clinical medicine. It is based on some of the current conceptions of the functions of the autonomic nervous system, which involves the nerves governing the processes over which the human being has no voluntary control. These processes affect the heart muscles, the musculature of the walls of the blood vessels, contractile viscera, such as the different parts of the alimentary tract and the bladder, and the organs of generation. Secretory nerve fibers also come into the same category. There are assumed to be at least two divisions of the autonomic system that are anatomically and physiologically distinct. The sympathetic group of nervous structures is reputed to be concerned with the general increase of work and utilization of energy in various parts of the body; the parasympathetic system is more intimately related to the processes that take place during bodily rest. Thus, in a sense, the two groups have opposite functions and the resultant of the conflict is an equilibrium between the "vagotonic" and the "sympathicotonic" influences.

A new light has been thrown on these generalizations by the extensive investigations conducted at the Harvard University Medical School [1] on the exclusion of sympathetic impulses from parts of the body. Bilaterally sympathectomized animals have lived in the laboratory for many months in good health and performing all the routine functions normally. Hence the assertions that the superior cervical sympathetic ganglions or the mesenteric nerves are essential for life are disproved. Unilateral exclusion of sympathetic impulses has not produced any demonstrable differences in bilaterally sympathetic organs during the period of growth; and sympathectomy does not prevent the female from performing the functions of reproduction and lactation.

One might expect, in view of the alleged antagonisms, that such exclusions of sympathetic impulses would bring about "imbalance"—a "vagotonia" wherein the sympathetic tone is banished. According to the Harvard investigators, the changes that follow the excision of sympathetic ganglions are not permanent as they might reasonably be expected to be if antagonistic impulses were thus left unopposed. Pathologic symptoms are remarkable for their absence.

The ability of sympathectomized individuals to carry on under the quiet conditions of the laboratory must not be taken to indicate any minor importance of the excluded nervous structures. The sympathicosuprarenal system, in particular, is believed by Cannon and his co-workers to be of primary service for adjusting the internal environment to the special and urgent needs of the body. This is the debated emergency function. As they point out, with a lack of sympathetic action in critical situations requiring vigorous effort, there would be no secretion of epinephrine, no rise in the content of blood sugar, no polycythemia, no marked splanchnic vasoconstriction with consequent rise in blood pressure and faster blood flow, no great acceleration of the heart and no shifting of the circulation to benefit the contracting muscles. Hence the sympathetic system is assumed to find its great service in times of critical emergencies in rapidly adjusting the innervated organs for the use of the mechanisms that respond to external exigencies. Autonomic imbalance, as such, is of minor import.

1. Cannon, W. B.; Newton, H. F.; Bright, E. M.; Menkin, V., and Moore, R. M.: Some Aspects of the Physiology of Animals Surviving Complete Exclusion of Sympathetic Nerve Impulses, Am. J. Physiol. **89**: 84 (June) 1929.

DIET AND GROWTH

With progress in the knowledge of nutrition, a number of investigations have demonstrated that, in certain species of animals at least, it is possible to augment the customary rate of growth through a judicious selection of food. There is, of course, abundant evidence available to indicate that heredity plays an important directive part both in the rate of gain and in the maximum size ordinarily attained by the individuals of selected groups. Animal husbandry is continually taking this consideration into account. Most students of animal growth also appreciate that inappropriate feeding may retard the customary increments in size, despite any inherent hereditary growth tendencies.[1] This is due to the fact that the organism cannot construct de novo a considerable number of the materials that are indispensable for body building; hence they must be supplied in adequate amounts and due proportions in the selected food intake.

With such limitations in mind as furnishing exceptions to the general experience, it has become customary to depend on certain types of statistical averages as indexes of the "normal" rates of growth. This is particularly true in reference to the growth of children. In view of the recent observations on dietary modes of

1 Daniels, Amy L.; Hutton, Mary K.; Stearns, Genevieve, and Hejinian, Lucea M.: The Relation of Rate of Growth in Infants to Diet, Am. J. Dis. Child. **37**: 1177 (June) 1929.

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accelerating the growth of some animals far beyond the rate that the reported "normal curves" or average observations have led one to expect, it has become pertinent to inquire whether the current "standards" for human growth represent anything approaching the best attainable. It is customary to assign variations from the "standard" to little understood idiosyncrasies, whereas the progress of science is directed to the explanation of deviations from the expected. Thus, allergic manifestations in man are no longer properly described as inexplicable idiosyncrasies. A duty therefore arises to discover, if possible, the antigenic or sensitizing substances in the environment or intake so that they can be either avoided or rejected.

Similarly has appeared the desirability of passing on the conventional standards of child welfare, notably those relating to the gains in size. One may well ask, furthermore, what the indexes shall be. Are body weight or body length to supply the criteria? Or are there perchance other physical measurements or chemical data that give a better insight into what is represented by growth and development? Enough statistics have already been gathered in recent years to indicate that some revision of the current assumptions is called for. The "overweight" that is being reported for many children in school presenting superior advantages probably represents an approach to the optimal size for age rather than any disproportionate and therefore undesirable physique. It has been observed [1] that the physical measurements of the group of intellectually gifted children in California, reported by Baldwin,[2] are in all probability more nearly the standard that should be attained by all children.

The effect of diet, apart from environmental factors, on the gains of infants has recently been indicated by the experiments of Daniels and her co-workers [1] at the Child Welfare Research Station of the State University of Iowa. Two groups of babies receiving feedings of modified cow's milk, one with cod liver oil and another without it, have been examined from the standpoint of growth as exemplified in gains of weight and also in the amounts of nitrogen, calcium and phosphorus retained. Thus the claim of mere gains or losses of water could be checked. The infants receiving the cod liver oil as a supplement not only weighed more at the same age than those who were not so supplied but were considerably heavier than the accepted standards for infants of their respective ages and birth weights. There was also a parallelism in the better growing babies between the amounts of the important tissue building elements—nitrogen, calcium and phosphorus—retained, thereby indicating an appropriate incorporation of these construction materials into the structure of the organism. The unique components of the cod liver oil are, of course, the fat-soluble vitamins A and D. Hence the Iowa investigators venture the conclusion that conditions which make for better utilization of calcium and phosphorus will result in larger and physically better developed children.

The Iowa report accordingly insists that the accepted standards of growth for infants are too low. Realizing that weight measurements may have serious limitations or even be sources of error for establishing and evaluating physical development. Daniels and Hejinian [3] have sought other criteria and believe that they have found one standard in the output of creatinine. The latter can be accurately measured in the day's urine with the ordinary facilities of the clinical laboratory. The output of creatinine is regarded by many as a measure of the active protoplasmic tissue; and there seems to be a direct relationship between the output of creatinine and the body weight, expressed by the so-called creatinine coefficient. Daniels and Hejinian found, as was to be expected, that the output of creatinine increases as infants grow older. Among the Iowa children whom they examined, the increase was gradual in some cases; in others there was a sudden increase between the third and the sixth month of age. This appeared to be coexistent with the greater muscular activity of the infant. After comparing the various available relationships, it is suggested by Daniels and Hejinian that the relation of creatinine output to body length may give a more nearly accurate measure of a child's physical development than is shown by his creatinine-weight coefficient or his height-weight relationship. If such conclusions can be established, they may lead to a more rational method of evaluating and treating the so-called undernourished child.

2. Baldwin, B. T.: Anthropometric Measurements of a Group of Gifted Children: Genetic Strides of Genius, Palo Alto, Calif., Stanford University Press **1**, 1925.

3. Daniels, Amy L., and Hejinian, Lucea M.: Growth in Infants from the Standpoint of Physical Measurements and Nitrogen Metabolism, Am. J. Dis. Child. **37**: 1128 (June) 1929.

RADIOACTIVE WATERS AND SOLUTIONS

Whenever a new substance is identified by the research of chemists, whenever a new force is developed through the investigations of the physicists, whenever a philosopher propounds some new concept in the field of thought or mental activity, an inspired charlatan or promoter is likely to seize on the substance, the device or the idea and exploit it for the cure of disease as a means of personal gain. The history of medicine is replete with records to substantiate this statement. Gold cures, electric cures, magnetic cures, radium cures, and cures by all sorts of means of reenforcing the power of suggestion, have been collected by the hundreds and their names carefully indexed in the files of the Bureau of Investigation of the American Medical Association.

Not many years have passed since the Council on Pharmacy and Chemistry, basing its decision on the then available evidence, admitted to New and Nonofficial Remedies various preparations containing in

solution radium or radium emanation, and various devices for causing radium emanation to pass into drinking water. True, the evidence was not extremely well controlled or profuse in amount, but there seemed to be a demand by physicians for such preparations and the Council considered it worth while to set up at least minimum standards of radium content or radium activity. Actually, innumerable preparations were on the market which contained insufficient radium to have any demonstrable effects. There were jars for conferring radioactivity on the waters they contained with not enough radium in the walls of the jars even slightly to disturb the leaf of an electroscope. A considerable period of time has now elapsed since such preparations first became available. The evidence in support of the contention that radioactive drinking waters are useful for the control of disease or for the benefit of human health has not been profuse in amount or inspiring in scientific value. Indeed, a survey of more recent publications inclines to a dismissal of the entire matter as unproved and unsubstantiated. For this reason, no doubt, the Council on Pharmacy and Chemistry has issued the following statement:

> From an examination of the available evidence, it appears that the value of the internal use of radium solutions or of water containing radon in chronic arthritis, gout, neuritis and high blood pressure is not demonstrated by controlled clinical evidence; that in spite of many years of trial, acceptable evidence has not become available and until such evidence does become available the Council has decided not to accept generators for the production of water charged with radon or radium solutions intended for intravenous use.

The announcement by the Council on Pharmacy and Chemistry disposes of the claims made for all sorts of solutions and for the devices to be used in preparation of such solutions, whether they contain considerable amounts of radium or merely enough to confer activity resembling the flavor of chicken soup when the chicken has had to do double duty as stewed chicken and chicken soup flavor. Today there are offered both to physicians and directly to the public solutions of radium and of radon, for drinking, for bathing and for injection, with claims of virtue not only in the conditions mentioned in the report of the Council but also for anemia, rejuvenation, regeneration, leukemia, boils, blackheads and pimples. Rejuvenation has become a catchword for promoting all sorts of strange preparations and apparatus. The venders capitalize suppressed wishes and desires and exploit all that the power of suggestion is able to do for the impotent. This they do, let it be emphasized, whether or not the devices provide any considerable amount of radium activity. But the statement by the Council settles the matter regardless! In one of the dialogues of the two Black Crows, Moran imitates the blowing of a trumpet. After a few moments Mack says: "Even if that was good I wouldn't like it." Of the radioactive drinking waters it may now be said: "Even if they did have some radioactivity, there is no evidence that they would have any value."

THE TREATMENT OF ASTHMA

The present-day treatment of asthma can scarcely be described as involving any well standardized or universally dependable procedure. This statement will probably be admitted by most physicians, even if the newer studies on the interrelations of bronchiospasm to anaphylaxis are taken into account. Detectable allergy at best accounts for only a fraction of the cases of asthma that come under observation. A recent careful compilation of more than a thousand asthmatic patients in an eastern clinic has indicated a possible relation to some sort of extrinsic antigen in somewhat less than half of them at most. This includes such factors as "pollen asthma" and "animal asthma." Such failures to explain the disorder on the basis of extrinsic exciting causes make it easier to appreciate why the search for foci of infection as the possible "trigger mechanism" has been so active.

It is doubtless true that many patients with asthma have well defined lesions in the nose, throat or sinues; consequently some clinicians have considered the bronchial spasm to be merely a reflex effect of a local stimulus arising in the upper air passages and transmitted through various nervous channels to the sympathetic trunk in the neck.[1] This point of view is largely responsible for the current tendency to secure remedial effects by operations on the nose and throat, as well as by removal of foci infection about the teeth. There is little doubt that in some instances such operative treatment has promoted the general health of the patients and actually brought relief from asthma, even though only temporary. At the Massachusetts General Hospital in Boston, Rackemann and Tobey[2] have undertaken a statistical consideration of the operative treatment of asthma, particularly in relation to the elimination of foci. It is evident from their data that the presence of foci bears little relation to the outcome of the asthma. Many of the patients gave a history of previous operations on the nose and throat without regard to the cause of asthma as found. About one fifth of the asthmatic persons examined showed infected, abscessed teeth; but the end-results of the asthma were the same whether the teeth were left in or extracted. Local treatment of the nose, throat and teeth had apparently brought about permanent relief from asthma in about 5 per cent of the cases. Beyond this the results of operative intervention, including removal of septal spurs or large turbinates and radical drainage of several sinuses at the same time, are frankly disappointing.

From the present ignorance one gains the conviction that any wholesale introduction of operative treatment for asthma does not have any justification and leads to undesirable disappointment. Removal of obvious

1. Sluder, Greenfield: Asthma as a Nasal Reflex, J. A. M. A. **73**: 589 (Aug. 23) 1919.
2. Rackemann, F. M., and Tobey, H. G.: Studies in Asthma: IV. The Nose and Throat in Asthma, Arch. Otolaryng. **9**: 612 (June) 1929.

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foci and nasal obstructions as well as the establishment of proper drainage are procedures that often are justified regardless of any special disease or disability in a patient. They cannot be depended on to relieve an asthmatic condition. At best conservative treatment and conservative surgical measures alone are warranted. The Boston investigators venture the suggestion that clinical lesions of the nose and throat may develop from the same fundamental cause as the asthma itself and be part of the pathologic process of the disease. The fact, they argue, that these lesions are not found in every case does not exclude such a theory. They may represent an end-stage of a process which in its beginning is not easily recognized. Rackemann and Tobey assume that, like the more obvious vasomotor rhinitis, this process may appear and disappear during the early stages in accordance with the appearance of asthmatic symptoms. A thickening of the paranasal mucous membrane may be the counterpart of the thickening of the bronchial mucous membrane. An orgy of conventional operations will not adequately solve such a problem.

Current Comment

FIGHTING PLAGUE IN CHINA

Rather less than a year ago, on the territory in northern China that is now threatened with military invasion, a silent but significant campaign was launched and in three months was brought to a victorious conclusion. Newspaper correspondents have not popularized the struggle, yet it lacks nothing in dramatic force or unusual incidents as the story now comes from the pens of Wu Lien-Teh and his colleagues of the Manchurian Plague Prevention Service at Harbin.[1] When Dr. Wu reached the plague center, September 16, the epidemic had progressed unchecked for two weeks. The sick were left unattended and begged in vain for relief. Dead bodies lay unburied in the open fields. It was, in Dr. Wu's words, "an awkard situation." The populace mistrusted the white-robed doctors, having greater faith in certain monkey shaped dolls made of blue cloth which they hung from the roofs to render their bodies immune. Military aid was refused and the doctors proceeded to their campaign of education and persuasion. Nor was scientific research forgotten. In order to study the incidence of pneumonic complications in bubonic cases, a number of necropsies were performed. "To allay the suspicions of the populace, we carried the dead from the hospital to our cremation pit one fourth of a mile away. Autopsies were made in the open field. . . . Much trouble was caused by the fierce village dogs, which constantly hovered around us and readily devoured human cadavers without compunction if not driven away." Dissection was on the bare ground. In warm weather the bottle flies added to the general discomfort. Under such conditions the methods of modern medical science were brought into play and in a short time the epidemic was under control. In a summary history of this little war, Dr. Wu expresses satisfaction at the progress that has been made in the knowledge of the epidemiology of plague in North China. Some new rodents have been proved susceptible, some new species of fleas discovered. Local rats have been definitely shown to be naturally infected with plague, all of them infested with *Xenopsylla cheopis*, which carries plague in India and other warm countries. The outbreak has taught an important lesson to these medical strategists. Plague can no more be thought of as a local affair limited to certain portions of northwest Manchuria; it is entrenched in China proper and must be fought on a wide front, leading southward from the Russian border into Shansi province. The director of the plague commission is already forming his plans.

1. Wu, Lien-Teh; Pollitzer, R.; Lin, C.-S., and Jettmar, H. M.: Studies upon the Plague Situation in North China, Nat. M. J. China **15**: 273 (June) 1929.

OBSTRUCTIVE JAUNDICE AND THE LIVER LYMPHATICS

The recent history of physiologic research on the bile indicates how slowly a proper understanding of some of the most common manifestations of physiology and pathology may develop. The secretion of bile has been the subject of detailed study for a century, and the phenomena of jaundice have attracted attention for an equally long period. Yet it was not until quite recently that the extrahepatic origin of the biliary pigment bilirubin was conclusively demonstrated and the independent genesis of the most conspicuous components of bile, namely, its pigments and the biliary acids, in different localities was convincingly established. When the flow of bile is suppressed or obstructed, jaundice results. This is manifested by the appearance of abnormal quantities of biliary constituents in the blood, whence they are excreted or transferred into tissues where they may become conspicuous, if not actually objectionable. The path by which the restricted bile components reach the circulation has been considerably debated. It is conceivable that they pass directly through the liver cells backward into the blood stream. There is no doubt that this channel is often followed. But the lymphatics also offer a possibility as a path of absorption and transfer when egress into the bowel is interfered with. Lymphatic vessels are found in the portal spaces, beside the portal vein and the bile duct. The perivascular reticular space, which intervenes between the hepatic cells and the endothelial lining of the capillaries, is continuous with the portal spaces. According to Mayo and Greene [1] it is probable, therefore, that tissue fluid may pass along this reticular space to the portal spaces and there find entrance to the lymphatic capillaries. This explains the considerable concentration of bile salts that these investigators at the Mayo Clinic have found in the lymph—quantities exceeding those of the blood—in cases of experimental biliary obstruction. The results indicate, as Mayo and Greene maintain, that bile resorption in obstructive jaundice may occur through both vascular and lymphatic channels, although the latter possibly are the more active during the early hours of obstruction.

1. Mayo, C., 2d, and Greene, C. H.: Studies in the Metabolism of the Bile: IV. The Rôle of the Lymphatics in the Early Stages of the Development of Obstructive Jaundice, Am. J. Physiol. **89**: 280 (July) 1929.

Association News

MEDICAL BROADCAST FOR THE WEEK

The American Medical Association Morning Health Talks and Evening Health Hints from Hygeia

The American Medical Association broadcasts daily at 11:15 in the morning, Chicago daylight saving time, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of September 9-14 is as follows:

September 9. "What's a Health Examination Anyway?" by Dr. J. M. Dodson.
September 10. "What's a Health Examination Anyway?" by Dr. J. M. Dodson.
September 11. "Trachoma," by Dr. J. O. Nall.
September 12. "Quack Cancer Cures," by Dr. Arthur J. Cramp.
September 13. "Adolescent Suicide," by Dr. R. G. Leland.
September 14. "Cheese—The Concentrated Food," by Mr. Cecil Bean.

Evening Health Hints from Hygeia, 8 o'Clock, Chicago Daylight Saving Time

September 9. Plain Facts About Carbon Monoxide.
September 10. Teaching Children to Eat Vegetables.
September 11. Do You Know?
September 12. Sixteen Rules of Health.
September 13. Relation of Shoes to Health of Feet.
September 14. Do's and Don'ts About Eating.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Hospital News.—The Escambia County Medical Society celebrated the opening of the Atmore General Hospital, August 27, at a special meeting to which physicians from northwest Florida and Alabama were invited. The president of the board of directors, Mr. G. R. Swift, presented the hospital to the staff. There was an afternoon and evening scientific program, and a barbecue on the hospital grounds.

CALIFORNIA

Validation Certificates Recovered.—The validation certificates of the state board of medical examiners, number S-1422 to S-1471, were returned a few days ago to the board by the postoffice. They had been miscarried in the mails (THE JOURNAL, Aug. 10, 1929, p. 463).

Visiting Professorship Established.—The president of the University of California has authorized the establishment of a visiting professorship in the medical school. The first occupant of the new chair will be Dr. Lewellys F. Barker of Johns Hopkins University School of Medicine, Baltimore, who will lecture and hold clinics during March, 1930. All physicians in addition to the students will be invited. Dr. Barker was for eight years chief of medical service at Johns Hopkins Hospital.

Meningitis on Ships from Shanghai.—The outbreak of meningitis on steamers from the Orient which has engaged the attention of health authorities for several months on the Pacific Coast is now under control, and its source is said to have been traced to Shanghai. Dr. Herbert H. Darling, San Francisco, whom the Dollar Steamship Company engaged to make a survey of the meningitis situation in the Orient, believes that the cases occurring on transpacific steamers developed from contact of passengers with residents during stops at Shanghai, where it is estimated about 10,000 succumbed to meningitis.

Fake Illinois Diploma Found.—The state board of medical examiners raided the office of the "Asia Coast Development Company" in Los Angeles, July 24, and found a fake University of Illinois diploma issued to K. Higashi who, it is said, negotiated the sale of a diploma with a Chinese herbalist. The plot of the diploma mill, recently uncovered in Los Angeles, was hatched at Leavenworth Prison in 1927-1928. It is alleged to involve K. Higashi, a Japanese of Los Angeles, "Dr." H. W. Donwell, Kansas City, Mo., Frank Jaqua, attorney of Portland, Ind., and George (Rush) Meadows of Los Angeles, all of whom were prisoners at Fort Leavenworth when the plot is alleged to have been formulated.

Grants for Research.—Gifts to the University of California amounting to more than $100,000, announced by President Campbell, August 13, included $50,000 from the Rockefeller Foundation for work on vitamins and hormones by Dr. Herbert M. Evans; $1,150 from the National Research Council to study the effects of irradiation on living organisms; the first instalment ($625) of a gift of $12,500 to be made over a period of five years by the Chemical Foundation, Inc., for the work of Carl L. A. Schmidt, Ph.D., in biochemistry; $50 from the milk commission of the San Francisco County Medical Society, and $300 from the Certified Milk Producers' Association of America for the study of brucella infection of milk.

Hundreds of Cases of Flexner's Dysentery.—An epidemic of dysentery starting in San Quentin Prison, August 3, had by August 8 amounted to 551 cases in a prison population of about 4,500. Bacteriologic examinations by the prison physician, Dr. Leo L. Stanley, and by the state board of health showed that it was the Flexner type of dysentery. Dr. Stanley wrote, August 26, that the epidemic was practically ended. The origin does not appear to be clear at this time as the prison is in a good sanitary condition. A large epidemic of Flexner's dysentery occurred at San Quentin in August, 1926, and another in 1927. There were practically no cases in 1928. The condition was characterized by severe prostration, diarrhea and aching of the bones. There have seldom been any fatalities.

CONNECTICUT

Society News.—The state department of health says that during the six years it has conducted health exhibits at agricultural fairs, about 135,000 people have seen the exhibits and 25,000 of them have attended the health moving pictures. This work will be continued during September at fairs in Goshen, Hamburg, Meriden, Newington and Pachaug. Some new films to be shown are "Garden of Childhood," portraying the health habits of the preschool child; "Tommy's Troubles," showing that sound teeth depend on the right kind of food; "Too Many Pounds," showing a safe method of reducing, and "Sun Babies," showing the value of sunlight in preventing rickets.

GEORGIA

Official Report of Mortality Rate.—The U. S. Department of Commerce announces that the death rate for Georgia for 1928 was 1,124.3 per hundred thousand of population. The principal causes of death were heart disease, nephritis, cerebral hemorrhage, tuberculosis, cancer and diabetes. The pellagra death rate was 26.8 and the pneumonia rate 84.9. Georgia was readmitted to the U. S. registration area in 1928, owing to a new law passing the legislature. The state had been in this area from 1922 to 1925, but in the latter year the state registration law was declared unconstitutional. The U. S. Bureau of the Census received no reports from the state as a whole in the interim.

Society News.—Dr. Eustace A. Allen addressed the Fulton County Medical Society, August 1, on "Review of Treatment of Pulmonary Tuberculosis"; Dr. Elmore C. Thrash gave a report of the annual session of the American Medical Association at Portland, Ore.; Dr. James L. Campbell, a clinical talk on "Aneurysms," and Drs. Carl C. Aven and Roy H. McClung, case reports on bilateral pneumothorax and tularemia, respectively.——The Southern Surgical Association will meet at Savannah instead of Atlanta, December 10-12.——Among those addressing the Tenth District Medical Society's annual summer meeting at Carmichael's Pond near Augusta, August 14, were Drs. Robert C. McGahee, Warrenton, on "Pellagra"; Guy T. Bernard, "Early Recognition of Cancer," and John Wright, "Hydrogen Ion Concentration."——The Calhoun County Medical Society was recently addressed by Dr. Jack W. Jones, Atlanta, on skin diseases and their prevention.

MARYLAND

Dedication of the Welch Medical Library.—The president and trustees of Johns Hopkins University and Hospital announce that the William H. Welch Medical Library and the department of the history of medicine will be dedicated, October 17-18. The address on Thursday will be given by Dr. Harvey Cushing, Moseley professor of surgery at Harvard University Medical School, Boston, and on Friday by Prof. Karl Sudhoff of the University of Leipzig. There will be conferences on

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the history of medicine and medical libraries at 3 p. m., a reception, Thursday evening, and the presentation of the Harvey Tercentary Film, Friday afternoon.

MICHIGAN

Children's Clinics in Menominee County.—The Children's Fund of Michigan announced, August 27, that a series of children clinics will be maintained in Menominee County from three to five years at an annual expense of from $25,000 to $30,000. This is the first announcement of the fund affecting especially the Upper Peninsula (THE JOURNAL, April 27, p. 1456).

Society News.—The Upper Peninsula Medical Society elected Dr. Augustus J. O'Brien, Ironwood, president for the ensuing year, and selected Marquette as the meeting place in 1930.——The Gogebic County Medical Society endorsed a clinic for crippled children which was held under the auspices of the Ironwood Rotary Club, August 28.——Health service at the county fair this year was for the first time sponsored by the Washtenaw County Medical Society. There were health exhibits, health examinations, immunization against diphtheria and smallpox, and lectures and moving pictures. The society was assisted by the county tuberculosis association, the health department of Ypsilanti and the nurses' organization.

Detroit's Standard for Swimming Pools.—Several years' experience in classifying swimming pools by their sanitary condition has led the Detroit department of health to adopt a new standard based on the bacterial analysis of the swimming pool water. The sanitary standard was based on the condition of the best operated pools, but it has become evident to the health department that this standard was unsatisfactory. Any method adopted should reflect the possible danger which the bather assumes when he uses the pool. It seems, therefore, that the use of *B. coli* as an index to pollution would be satisfactory, on the assumption that when a number of persons use the pool the water will become contaminated with these organisms. The department will therefore base the sanitary standing of any pool on two things: (1) the percentage of total bacterial counts which shall exceed 200 per cubic centimeter sample of water, and (2) the percentage of 10 cc. portions of water examined which are found positive for *B. coli*. The method followed is to take the percentage of the number of samples showing total bacterial counts in excess of 200 and the percentage of the 10 cc. portions of water which are positive for *B. coli* in any series of samples and to average them arithmetically. The average figure will then be subtracted from 100 and the result will be called the sanitary rating of a particular pool for the period covered by the series of samples. The average of the percentage of the samples showing total bacterial counts above 200 and the percentage of the 10 cc. portions positive for *B. coli* should not exceed 10 per cent. A point adopted in order to eliminate the possibility of a swimming pool operator confusing the result obtained with a 100 per cent perfect grade is to move the decimal point from the resulting sanitary rating, thus making a perfect sanitary rating of 100 appear as 1,000. Detroit chooses to include as a satisfactory sanitary standard all pools thus rated as 900 or more.

MINNESOTA

Official Report of Death Rate.—The U. S. Department of Commerce announces that the death rate in Minnesota in 1928 was 954.3 per hundred thousand of population as compared with 919.1 in the previous year. The increase was due to higher rates for cerebral hemorrhage, cancer, diabetes, influenza, pneumonia, acute anterior poliomyelitis, enteritis and accidents. There were decreases in the rates from tuberculosis, nephritis, scarlet fever and typhoid. The estimated population in Minnesota in 1928 was 2,722,000.

Conference School for Reserve Officers.—A conference school on an active duty basis without pay is to be established at Rochester, Minn., for medical reserve officers, November 4-17. It will be under the direction of the surgeon of the seventh corps area and his assistants. The instruction will cover subjects such as are given at the summer training camps at Fort Snelling. The conferences will begin at 1 o'clock in the afternoon. Each period will be occupied by a reserve officer giving his conference subject, after which the subject will be discussed. The object is to train reserve officers who are not able to attend the summer camps and wish to get the required number of hours in their grade during their period of appointment. Ninety-eight hours of credit will be given for the course. Any one interested should get in touch with Dr. Louis B. Wilson, Rochester.

MISSISSIPPI

Society News.—Dr. Charles G. Bass, dean and professor of experimental medicine, Tulane University of Louisiana School of Medicine, New Orleans, and Dr. James S. McLester, Birmingham, Ala., will address the annual meeting of the Issaquena-Sharkey-Warren Counties Medical Society in December. The society met, August 13, at Vicksburg, to hear Dr. Hugh H. Johnston present a paper on "Undulant Fever"; Dr. Sydney W. Johnston on "Conservatism in Surgery," and Dr. Edley H. Jones on "Sinusitis in Children."——Dr. Robert A. Strong, who has recently returned to Pass Christian from Hagerstown, Md., to reside, and Dr. Donald G. Rafferty have been elected directors of the Pass Christian Chamber of Commerce.

MISSOURI

Summer Ban on Custard and Cream Puffs.—Following a request from the Master Bakers' Association, the health commissioner of St. Louis, Dr. Max C. Starkloff, issued an order, August 15, prohibiting the sale of custard or cream confections until October 1. The health commissioner not only banned their sale in stores but warned against preparing such food in homes. One batch of bakers' goods examined by the health department was said to have been found "well colonized with paratyphoid." A similar order was issued by the health commissioner of Chicago a few weeks ago.

Kansas City Annual Clinical Conference.—The Kansas City Southwest Clinical Society will hold its seventh annual fall clinical conference in Kansas City, October 7-11, with headquarters at the President Hotel. The allied hospitals will conduct clinics each morning, arranged so that each man can select any pecialty in which he is interested. The guests will be Drs. Chevalier Jackson, Philadelphia; Joseph L. Miller, Chicago; George W. Crile, Cleveland; Robert F. Lischer, Mascoutah, Ill.; Thomas McCrae, Philadelphia; A. A. Fletcher, Toronto; Jennings C. Litzenberg, Minneapolis; Rea E. Smith, Los Angeles; Joseph A. Capps, Chicago; Andre Crotti, Columbus, Ohio; Melvin S. Henderson, Rochester, Minn.; William C. Finnoff, Denver; Bela Schick, New York; William Allen Pusey, Chicago; Robert B. Osgood, Boston; Vilray P. Blair, St. Louis; Russell L. Cecil, New York; Ralph Pemberton, Philadelphia, and Senator Henry J. Allen. A new feature will be the graduate course given in specially equipped rooms by members of the clinical society and certain of the guests over a three day period. Classes will be limited to about ten and admittance will be by advanced registration. Other features will be a joint meeting with the Kansas City Society of Ophthalmology and Oto-Laryngology, when Dr. Finnoff will give a demonstration on "Histopathology of Operative Complications in the Eye"; the Canti Cancer Film; a joint meeting of the American Committee for the Control of Rheumatism, and scientific and commercial exhibits. At the public meeting, Senator Allen will speak on a layman's point of view of the doctor; Dr. Logan Clendening will give to the layman the point of view of the doctor. Entertainment includes alumni banquets, a smoker, noonday round table discussions, golf and special entertainment for the ladies. The Kansas City Southwest Clinical Society was organized seven years ago to develop the educational advantages of the clinical material of Greater Kansas City and to make them available to visiting physicians. The president is Dr. Francis E. Wilhelm, and the executive secretary, Mrs. H. L. Heller, 620 Rialto Building.

NEW JERSEY

Moving One Million Mollusks.—The bureau of chemistry of the state department of health with the assistance of local police recently supervised the removal of more than a million clams from the polluted and condemned water ways west of Wildwood to other clean waters where the clams will in time purify themselves. The fifty-six men working twenty-eight days who gathered 1,286,000 clams in this transfer received a total of $10,000 in wages, but the food value of the mollusks is estimated at $25,000. New Jersey like other seaboard states keeps watch over its shellfish beds in order to protect the public from diseases which the consumption of polluted shellfish may bring about.

Monmouth County Leads in Immunization.—There were diphtheria prevention campaigns in every county in New Jersey during 1928 and in 528 local health areas. Almost as many children (125,000) were given toxin-antitoxin at public clinics during 1928, as were immunized in the preceding seven years. The state health department estimates that altogether at least 275,000 have been given antitoxin at public clinics in New Jersey.

Monmouth County is foremost; every place in which a public school is maintained has offered toxin-antitoxin at least once and most of them several times in recent years. Cape May, Essex, Hudson and Ocean counties have done likewise in all but a few municipalities. While children of school age make up the majority of this multitude, an increased interest among parents was evident with regard to preschool children. The death rate for diphtheria in New Jersey for 1927 (11.4 per hundred thousand of population) was exceeded only by Michigan, in which the rate was 11.7.

NEW MEXICO

Malaria in Dona Ana County.—The outbreak of malaria in Dona Ana County in 1927 (THE JOURNAL, Feb. 25, 1928) was an increase of 1,300 per cent over the number of cases reported in 1926. The health officer, Dr. Charles W. Gerber, recommended a plan then to eradicate mosquitoes from the county. His recent report shows that last year there were only 438 cases reported for the county. Malaria control work there has consisted in the dusting of paris green, the planting of top minnows in streams, and a house to house survey. Persons found infected were given instruction in the prevention and treatment of malaria. Another survey of that kind will be made this year. The dusting operations with paris green, Dr. Gerber says, are the most extensive of any in the world. The adult mosquitoes that have been caught are of the pseudopunctipennis variety. Communities reporting say that mosquitoes have been so reduced that many persons now sleep outdoors unprotected by netting, something that has not been possible in years.

NEW YORK

Typhoid Carrier Detained.—After an absence of months following his escape from the Riverside Hospital in New York, Fred Morach, said to be a typhoid carrier, was placed in jail in Catskill pending disposition by the New York authorities. Morach, who is said to have been responsible for about sixty cases of typhoid in New York City, was being kept isolated at Riverside Hospital when he escaped.

Changes in State Hospital Assistants.—Dr. Leo M. Davidoff has resigned as assistant in neuropathology at the state psychiatric institute, and Dr. Charles W. Hutchings was promoted to senior assistant physician at the Utica State Hospital. Dr. Louis Kiss resigned as assistant physician at the Brooklyn State Hospital. Dr. Eugene W. Martz was appointed clinical director at Letchworth Village to succeed Dr. Howard W. Potter. Dr. Leo P. O'Donnell was promoted to senior assistant physician at St. Lawrence State Hospital. Dr. Michael Michaels was appointed assistant physician at the Central Islip State Hospital.

New York City

Friday Afternoon Lectures.—The New York Academy of Medicine announces its fourth series of lectures on subjects of special interest to practitioners to be held Friday afternoons at 4:30, to which the profession generally is cordially invited. The course begins November 1 and has been arranged as far ahead as April 11. The November lectures will be by Drs. Herman O. Mosenthal on "Interpretation of Kidney Function in Clinical Practice"; Francis W. O'Connor on "Parasitology from the Clinical Standpoint"; Jay F. Schamberg, Philadelphia, "Present-Day Treatment of Syphilis with Consideration of Comparative Values of Remedies Employed," and Frank R. Ober, Boston, "Relation of Orthopedics to Pediatrics."

Annual Report of Health Department.—In the first annual report since his appointment, Health Commissioner Dr. Shirley Wynne presents an interesting summary. It appears that there were no disease epidemics in New York City last year. Influenza was present in epidemic form throughout the country, but there was only a temporary increase of cases of mild type in New York. Typhoid reached the lowest incidence with 671 cases, while the ten year average for typhoid cases is about 1,041. There were only two cases of smallpox, both of which were contracted outside the city. This remarkable record is attributed to protection afforded by vaccination. Diphtheria declined by 2,731 cases over the previous year; however, 10,776 cases were reported during 1928. To safeguard the public from the transmission of disease, 270,000 food handlers were physically examined, two thirds of them by private physicians. The health department operated tuberculosis clinics at a total cost of $147,000; a per capita cost per patient of $6.93, and a per capita cost per visit to the clinic of $2.63, exclusive of rent and janitorial service. These clinics were established years ago. The department proposes to establish diagnostic chest clinics throughout the city instead of the present treatment clinics and to locate them in more suitable quarters to render service free to residents when referred by physicians; 11,600 cases of tuberculosis were reported to the department of health last year. The foregoing is, indeed, only a part of the work done by the department.

Abuses in the Beauty Trade.—The division of legal medicine of the city health department has since 1925 been investigating abuses in the beauty trade. Many beauty shops have been operating illegally and some physicians, the health commissioner says, have been discovered who advertise in beauty shops under a split fee arrangement. Nine varieties of lip stick which had been picked at random from the ninety odd varieties on the market were found to contain benzene, a poison irritating to the skin. There are said to be about 1,500 beauty parlors in the borough of Manhattan alone, about 150 of which could not be found at the address and about 500 of which were operating without a permit. The latter were made to comply with the law and a large number of cosmetics found to be poisonous were withdrawn from the market, Health Commissioner Wynne says. This work was done under the direction of Dr. Samuel Dana Hubbard with the help of the federal government, the state health departments of Connecticut, New Hampshire and Wisconsin and the National Better Business Bureau and the Better Business Bureau of New York. Many hair dyes on the market were found to contain the poison paraphenylenediamine, the use of which is forbidden by the sanitary code. Cases for prosecution are now being prepared against three local manufacturers who are using this poison in a disguised form. Display cards and visiting cards of some physicians claiming to do beauty work with the knife were found in many beauty shops, with which an arrangement had been made to split the fees for all work referred to them.

OHIO

Society News.—The state superintendent of claims, D. W. Stump, has reported to the chief of the workmen's compensation division that there have been forty-one death claims and twenty-five accident claims growing out of the Cleveland Clinic disaster which, from this standpoint, will cost the state nearly $64,000 in workmen's compensation.——Dr. George T. Harding, Jr., Columbus, addressed the Pickaway County Medical Society, Circleville, August 2, on hobbies and specialities in the practice of medicine.——The Perry County Medical Society, New Lexington, was addressed, August 19, by Dr. Elmer G. Horton, professor of pediatrics, Ohio State University College of Medicine, Columbus, on "Some of the More Common Errors in Infant Feeding."——The public speaking class conducted by the Toledo Academy of Medicine begins, October 16, with the Rev. R. Lincoln Long in charge. It will be limited to thirty.

Cancer Meeting at Cleveland.—The annual meeting of the Fifth District Medical Society at the Allen Memorial Library, Cleveland, September 20, will be devoted to a discussion of the diagnosis and treatment of cancer. The guest speakers will be Drs. William H. Kennedy, Indianapolis, on "Cancer of the Cervix Uteri"; Joseph McFarland, professor of pathology, University of Pennsylvania School of Medicine, Philadelphia, "Unknown Factors in the War Against Cancer," and Albert H. Freiberg, Cincinnati, president of the state medical association. The cancer film "This Great Peril" and the "Canti Cancer Film" will be exhibited. Twenty papers will be presented. The evening session will be a joint meeting with the Cleveland Academy of Medicine in the library building. There will be a buffet supper. The committee on arrangements comprises Drs. Clyde L. Cummer, councilor of the fifth district, Howard Dittrick and Lawrence A. Pomeroy.

TENNESSEE

Health at Nashville.—Telegraphic reports to the U. S. Department of Commerce from sixty-two cities with a total population of about twenty-nine million, for the week ending August 24, indicate that the highest mortality rate (20.6) was for Nashville and that the mortality rate for the group of cities was 10.5. The mortality rate for Nashville for the corresponding week last year was 14.2 and for the group of cities, 10.3. The annual rate for the sixty-two cities was 13.5 for the thirty-four weeks of 1929, as against a rate of 13.2 for the corresponding weeks of 1928. Caution should be used in the interpretation of these figures, as they fluctuate widely. The fact that some cities are hospital centers for areas outside the city limits or that they have a large negro population may tend to increase the death rate.

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Society News.—The Tri-County Medical Society, Sweetwater, was addressed, August 15, by Drs. George E. Wilson, Rockwood, on general anesthetics, John A. McCallum, Vonore, on infant feeding, and Joseph J. Harrison, Jr., of Loudon.——The Montgomery County Medical Society, Clarksville, was addressed, August 15, by Drs. Richard A. Barr and Samuel J. House of Nashville on "X-Ray and Radium in Gynecology" and "Treatment of Heart Failure," respectively. The society met at the home of Dr. Bryce F. Runyon, who was host at a barbecue. Physicians from Christian County and nearby places in Kentucky came over.——The newspapers, August 21, reported that fifty-three persons in East Tennessee had been stricken with infantile paralysis in the last forty-five days, with three deaths. The Knox County Medical Society accepted the request of the state health department to aid in checking the further spread of the disease. The counties reporting infantile paralysis were Knox, Johnson, Campbell, McMinn, Blount, Grainger, Hawkins, Greene and Washington.

VERMONT

Convent Quarantined.—Ten sisters were reported to be ill with typhoid at the Mount St. Joseph Convent, Rutland, August 17, when the health officer of the district, Dr. Charles F. Dalton, visited the convent to obtain specimens of the milk used for examination at the state laboratory at Burlington.

VIRGINIA

Personal.—Dr. Louis L. Williams, for six years in charge of malaria control work in Virginia, will go to India for a six months' mosquito survey of some sections of the lower country.——Dr. Charles E. Dyer has been appointed physician to the Majestic Collieries Company at Majestic, Ky.

Society News.—The Bedford County Medical Society, July 2, elected the druggists and dentists of the county as auxiliary members.——Dr. James D. Clements, Ordinary, addressed the Mid-Tidewater Medical Society in July at Saluda on ileocolitis, and Dr. Edgar C. Harper, Richmond, on tuberculosis in children.

Children's Hospital in Blue Ridge Mountains.—With a gift from Mr. and Mrs. James A. Gray, Winston-Salem, N. C., it was made possible to open recently the twenty-two bed Roaring Gap Children's Hospital in the Blue Ridge Mountains in Alleghany County. The hospital is at an elevation of 3,400 feet. The director is Dr. Leroy J. Butler, Winston-Salem, N. C.

WYOMING

Personal.—Dr. William H. Roberts, Sheridan, has been appointed a member of the board of health for Sheridan County, succeeding Dr. Thomas E. Marshall, who resigned because of poor health.

State Medical Election.—Dr. Emory L. Jewell, Shoshoni, was made president elect at the recent annual meeting of the Wyoming State Medical Society in Casper; Dr. Robert H. Sanders, Superior, vice president; Dr. Evald Olson, Lovell, treasurer, and Dr. Edwin Earl Whedon, Sheridan, secretary, reelected. The office of president having been made vacant by the resignation of Dr. John L. Linn, who recently moved to California, will be filled by Dr. Charles W. Jeffrey of Rawlins. The Casper meeting was said to have been most successful. More than 200 attended the annual banquet, at which Dr. Whedon presided as toastmaster. The next annual meeting will be in Sheridan, June 23-24, 1930.

GENERAL

Society News.—Dr. William F. Patrick was elected president of the North Pacific Pediatric Society at the annual meeting in Portland, Ore., July 10.——The National Safety Council, 108 East Ohio Street, Chicago, will hold its eighteenth annual safety congress in Chicago, September 30-October 5.——Dr. Willis C. Campbell, Memphis, was elected president of the American Orthopedic Society at the session held in London, England in July (THE JOURNAL, June 29, p. 2177).——At the annual meeting of the Pacific Physiotherapy Association, Los Angeles, in June, Dr. William W. Worster, San Gabriel, was made president, and Dr. Herbert V. Mellinger, Los Angeles, secretary-treasurer.

Bequests and Donations.—The following bequests and donations have recently been announced:

Sinai Hospital, Baltimore, $10,000 by the will of Mrs. Etta G. Levy, the income to be used for blood transfusions for patients unable to pay.

Children's Hospital, Columbus, $5,000 by the will of the late Mrs. Celia C. Jeffrey.

St. Luke's Hospital, Philadelphia, $10,000 by the will of Mrs. Mary A. Bernard as a memorial to the family name, and $1,000 for the nurses' home.

Methodist Episcopal Hospital, Philadelphia, $5,000 by the will of the late William A. Armstrong in memory of his sister.

Passavant Memorial Hospital, Jacksonville, Ill., $200,000 by the will of the late Charles A. Rowe for a new wing and $60,000 for its endowment.

St. Louis Children's Hospital, St. Louis, $40,000 by the will of Walter C. Taylor.

Indiana Christian Hospital, Indianapolis, $10,000 from Charles E. Pauley as a memorial to his three daughters, who were killed in the Sahara Grotto crash two years ago.

Home for Destitute and Crippled Children, Chicago, the entire estate of Frederic R. Skillman, D.D.S., Oak Park, Ill., amounting, it is reported, to about $350,000. The greater part of the income will go to the widow and after her death to the home.

The Country Home for Convalescent Children of the University of Chicago, $60,000 from Mrs. James N. Raymond to erect a building on the Du Page site of the home.

Northeastern General Hospital, Philadelphia, $10,000 by the will of Mrs. Elizabeth M. Teas of Ventnor, N. J., to endow a room in memory of her husband.

Physiologic Congress Closes.—There was a remarkable attendance at the Thirteenth International Physiological Congress at Boston which closed, August 24. Nearly 1,000 more members were enrolled than at the congress in Stockholm in 1926 and yet there were about as many European members in attendance at Boston. Forty-two nations were represented, an increase of nine. Of the total enrolment of 1,606 members, Canada and the United States sent 1,066. Next in order of attendance came Germany, Great Britain, France, Italy, Spain, Austria, Hungary and Belgium. One of the last to speak before the congress closed was Prof. Leon Fredericq of the University of Liege, who was president in 1892. Dr. William H. Howell, president of this congress, then introduced Prof. Henry H. Dale of the Institute of Medical Research in London who presented to the congress the minute book of the British Physiological Society. Prof. Johan E. Johannson of Stockholm was introduced. The international committee (the permanent board) made its report, and a vote was taken which resulted in the selection of Italy for the 1932 congress. A vote of thanks was rendered to the Federation of American Societies for Experimental Biology for their conduct of the present congress. Prof. Rudolf Höber of Kiel, who introduced the motion, paid tribute to Dr. Walter B. Cannon of Harvard, chairman of the bureau, and to Alfred C. Redfield and Edwin J. Cohn, secretaries. Following adjournment hundreds of the delegates went to Woods Hole to inspect the marine biologic laboratories.

American Public Health Association Meeting.—The annual meeting of the American Public Health Association will be at Minneapolis, September 30-October 5. The following meetings will be held simultaneously: the American Child Health Association, International Society of Medical Health Officers, American Association of School Physicians, American Social Hygiene Association, Conference of State Sanitary Engineers, Conference of State Laboratory Directors, and the third Northwest Conference for Child Health and Parent Education. In addition to the regular program of addresses and demonstrations, the local committee, the executive secretary of which is Dr. Richard O. Beard, 324 Citizens' Aid Building, Minneapolis, has arranged trips to filtration plants, milk producing and pasteurizing plants, the university dispensary, the cancer institute, Todd Memorial Clinic, the flour mills, dairy farms and other points of interest on the river and through the lake region. The entertainment includes the reception to the presidents Monday evening, dances, teas and drives to Lake Minnetonka, Narrows Bridge, the Shriners Hospital for Crippled Children, Gillette State Hospital for Crippled Children, Minnesota State Hospital for Crippled Children, Lymanhurst Clinic and the Michael J. Dowling Public School for Crippled Children, the Minneapolis General Hospital and the Citizens' Aid Building. A visit will be made Friday to the Mayo Clinic at Rochester, where a special program will be put on and a complimentary luncheon served.

Fake Remedies for Animal Diseases.—In view of the disastrous effects of contagious abortion in cattle, of hog cholera, and of influenza, tuberculosis and diphtheria in animals, farmers are led to believe that there are many remedies on the market which will cure these diseases. The consensus of reliable veterinary opinion is that there are no known drug cures for these diseases. Millions of dollars are being spent by the public for fake remedies, although the U. S. Department of Agriculture carries on a persistent campaign of education and has prosecuted a number of those who make extravagant claims for their remedies. One alleged cure for infectious abortion was found to consist of brown sugar and wheat bran which cost less than 40 cents to produce 9½ pounds of it, but was sold for $5. This particular "cure" is no longer on the market, for the government stopped its sale. While there are many others whose principal aim is profit alone without regard to the value delivered, there are manufacturers who are honestly advertising and who by study, and practical and

laboratory tests endeavor to supply the livestock owner with a remedy on which he may depend with reason in the prevention or treatment of the condition for which the manufacturer recommends it. The department of commerce has inspectors in all parts of the United States visiting factories where stock remedies are prepared, who learn how these remedies are made, labeled and distributed, and submit samples, together with their comments, to the central office in Washington. Minor violations are sometimes corrected by having manufacturers revise their statements. In more serious violations the shipments of goods are seized. Only a small percentage of these cases ever reach the courts. Recently about twenty so-called abortion remedies were taken off the market without a single case having been brought to trial.

Pharmacists Without Pharmacopeias.—The president of the American Pharmaceutical Association, David F. Jones, D.Sc., in addressing the annual meeting at Rapid City, S. D., referred to the changes which have come about in the U. S. Pharmacopeia. Dr. Jones said that the pharmacopeia over a period of years seems to have grown of less practical value to the pharmacist and the practicing physician and that with each revision has become more a book for the manufacturing chemists, the teacher and those employed in law enforcement. A result of this tendency is that today thousands of retail pharmacists are seemingly able to conduct their stores without a copy of either the U. S. Pharmacopeia or the National Formulary. The average prescription pharmacy is becoming more dependent on the store's private book of working formulas and less concerned with the official books. Under present tendencies, Dr. Jones continued, it might not seem strange were it to be discovered that selfish interests are an ever increasing cause of this decline in value of the pharmacopeia. The full revision committee in session should endeavor to shape the text to make it of the greatest possible value to the greatest number of dispensing pharmacists and practicing physicians—those particularly concerned with the treatment of the sick and the conservation of public health. Dr. Jones said that fully half of the material on the shelves of the drug stores today is unfit for use and has been placed there at the suggestion of men eager to sell the goods of the house they represent when there is no warrant in good business practice for stocking them. Among his recommendations to the American Pharmaceutical Association was that a well qualified man be employed as a field representative to visit colleges of pharmacy to organize student branches, and to visit boards of pharmacy and make contacts that would create active interest in professional pharmacy. He recommended that the association go on record as favoring the establishment of a full four-year course as a minimum requirement of a recognized course for the training of pharmacists.

FOREIGN

Portrait of Clifford Allbutt.—A bronze portrait of the late Sir Clifford Allbutt has been unveiled in the library of the medical school at Cambridge, England, where, when over 50 years of age and without experience as a professor, he took his place at once in the front of university life. Dr. Allbutt died in 1925, aged 88, the acknowledged leader of the profession in his country.

International Trachoma Prize.—The Royal Hungarian minister of public welfare and labor offers a prize of 2,000 Swiss francs for an independent work on the etiology of trachoma which indicates valuable progress in this field. Works that have already been published are eligible for the competition. The jury of award will announce its decision not later than Dec. 31, 1931. Essays should be addressed to Eye Clinic 1, Royal Hungarian Peter Pázmány University, Budapest (VIII, Mária-Utca 39).

Great Britain Selects a Director General.—Major-General Harold B. Fawcus has been selected as director general of the army medical services of Great Britain to succeed Lieut. Gen. Sir Matthew Fell, who will retire at his own request in September. General Fawcus is about 53 years of age. He has served in the South African campaign and in the World War, and has received many honors for distinguished service. He is now deputy director-general, in which position he will be succeeded by Col. W. R. Blackwell.

Facilities of School of Hygiene and Tropical Medicine.—Facilities for clinical work in tropical diseases are afforded the London School of Hygiene and Tropical Medicine by the Hospital for Tropical Diseases on Gordon Street which, under the auspices of the Seamen's Hospital Society, will continue in close touch with the school, although it is affiliated now with the University of London. When Joseph Chamberlain as colonial secretary founded the school of tropical medicine in 1899, at the instance of Sir Patrick Manson, it remained at the Albert Docks for years; then after the World War it was moved to Endsleigh Gardens. In 1921 the Athlone committee appointed by the minister of health recommended the establishment of a central institution affiliated with the university for the teaching of all branches of preventive medicine. The country, staggering under the cost of the war, was unable to meet the expense of establishing the school, so the Rockefeller Foundation, New York, offered the ministry of health about $2,000,000 toward the attainment of the project. With this sum a new site was purchased and the great building which was opened July 18 erected. The only condition required by the Rockefeller Foundation in making this gift was that the British government should contribute adequately toward its maintenance. The primary function of the school is to train medical men and women desirous of entering the public health services in England and abroad, to teach research workers, and to foster research in the sciences necessary to the progress of public health. The school has a library and a comprehensive and graphic museum which is open to the public. As constituted at present the school has the following divisions: public health; epidemiology and vital statistics; bacteriology and immunology; biochemistry; medical zoology; tropical medicine and hygiene. It possesses an entomologic field station at Farnham Royal, and an institute of agricultural parasitology at St. Albans.

Government Services

Navy Personals

Orders have been issued, recently, directing the following officers to the stations indicated for duty; Capt. Frank L. Pleadwell to bureau of medicine and surgery; Lieut. George W. Cooper, navy medical school; Comdr. Alfred J. Toulon, U.S.S. *New York;* Lieut. Comdr. John W. Vann, Asiatic station; Lieut. Robert M. Cochrane, navy hospital, Boston; Lieut. James F. Hays, navy station, Guam; Lieut. Edward E. Evans, Asiatic station; Comdr. Howard F. Lawrence, navy hospital, San Diego, Calif.; Comdr. Willard J. Riddick, navy academy; Lieut. William S. Mallory, Asiatic fleet; Lieut. Comdr. Albin L. Lindall, marine barracks, Quantico, Va.; Comdr. Charles J. Holeman, navy hospital, Norfolk, Va.; Comdr. Edwin L. Jones, navy recruiting station, Dallas, Texas; Comdr. George C. Thomas, U.S.S. *Texas;* Lieut. Royal A. McCune, U.S.S. *Salinas;* Lieut. Comdr. George B. Tyler, U.S.S. *Antaras;* Lieut. Raymond O. Cheney has resigned, effective August 5; Lieut. Harry D. Cowlbeck's resignation has been accepted, effective October 15. Lieut. Harold W. Jacox, resigned, effective July 2; Lieut. Verner J. Johnson has resigned; Lieut. William A. De Monbreun, relieved of all active duty and ordered home; Lieut. Comdr. Condie K. Winn, Marine Recruiting Station, New York; Lieut. James J. O'Connor, Marine Recruiting Station, Omaha; Lieut. Peter C. Supan, Asiatic Station.

Vacancies in Army Medical Corps

There are thirty-seven vacancies in the authorized commissioned personnel of the U. S. Army Medical Corps, notwithstanding the fact that thirty first lieutenants who have just completed their internships will be commissioned. During June the medical corps lost four officers, Capts. Richard J. Newman and Hubert S. Steenberg having been retired from active service, and Capts. Barton W. Johnson and Hamilton P. Calmes having resigned. There was only one appointment to the corps during that month, the new officer being Lieut. Alfred A. de Lorimier. In July up to the 29th, five officers were appointed while one resigned and one was discharged. The July appointeees are Lieuts. Thomas A. Wildman, Robert E. Lee, Frederick S. Craig, Durant Summers and Jesse B. Helfrich. The resignation was that of James F. Coupal, while Capt. Glenn I. Harker was honorably discharged during the month. At the same time that the thirty new lieutenants completed their internship, a new class of sixty-two interns began their instruction at the various large army hospitals. The war department announces that an examination of applicants for appointment as first lieutenant in the corps of the army will be held, October 7-11, and those desiring detailed information about the examination should write the adjutant general, war department, Washington, D. C.

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Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 10, 1929.

Disease Germs in the Upper Air

Remarkable experiments proving that disease germs are carried and epidemics spread by the thin air currents of the upper atmosphere have just been completed at Cambridge. The work has been directed by Mr. W. A. R. Dillon Weston, M.A., of the University School of Agriculture. In association with Mr. Everett of the Hampshire Light Aero Club, and Flight Lieutenant Goddard of the Cambridge University Air Squadron, he has been chasing bacteria by airplane and catching them by the million in traps. Three kinds of germ traps were used—glass slides smeared with petrolatum, test tubes containing culture mediums, and glass dishes also filled with a culture medium. They were taken up sealed in the airplane, unsealed and exposed when the desired height was reached, and then sealed again. The principal object is to trace how diseases of plants and crops can be spread through the upper atmosphere. Dr. Dillon Weston was not concerned with animal and human diseases. It was proved that spores and bacteria may be found at great heights and yet retain their vitality. With test tubes containing a culture medium, 40 per cent of the exposures were positive. The highest altitude at which the traps were exposed was 13,000 feet.

A particularly interesting flight was made from Duxford to Cambridge in May at an altitude of 2,000 feet. Three plates were exposed for a period of one minute. On arrival at Cambridge the machine was put up to 4,000 feet, and three exposures were taken on the return journey. After five days the plates were examined. It was impossible to count the contaminations on those exposed on the outward journey. Many hundreds of spores and bacteria must have alighted on the culture medium. The plates exposed at 4,000 feet were much less heavily contaminated, but these contaminations were greater than those obtained in previous flights. A comparison with flights in the winter months shows that in the summer the air is much more heavily charged with bacteria. The results obtained show how local epidemics of plant and animal diseases may be brought about and the ubiquitous nature of bacteria and of fungus spores in the upper air. Large numbers of these bacteria are active even at a height of 2 miles above the earth. The clouds were more heavily charged with spores and bacteria than the air a little below them. The work suggests that the air is the ideal medium for the transportation of disease organisms.

The Empire Cancer Campaign: Warnings as to Radium

At the annual general meeting of the British Empire Cancer Campaign held at the house of lords, the Duke of York presiding, Sir Thomas Horder, in submitting the annual report, said that the international cancer conference had already been fraught with important results, but the greatest result of all had been the impetus given to cancer study and research throughout the world. One very significant effect was the crystallization of the accumulated experience in regard to the relative efficiency of radium in the treatment of certain cases of the disease. This helped much to stimulate the formation in this country of a national radium fund. He sounded a warning against the unfounded belief in the complete potency of radium as a cure for cancer, which might have unfortunate results for the patient if carried into practice when the growth was completely removable by operation. In the course of time, and as the result of much further experience of, and improvement in, technic, possibly also in combination with other methods of treatment, it might well be that radium would come to equal, or even to exceed, operative measures in efficiency. At present, however, it was the duty of the physician, in many cases, in his patient's interest, to overrule his not unnatural antipathy to surgical measures. However, the number of cases to which radium was applicable, and the number in which brilliant results were achieved, increased every year.

He also gave another warning. It was doubtful whether many of the institutions that were today advertising for money wherewith to purchase radium had on their staffs those qualified to use it. An important duty devolving on the radium commissioners would be to satisfy themselves that those into whose hands this powerful but dangerous remedy was placed had been properly trained in its use. It might even be necessary to employ some of the money collected in providing for such training. The sixth annual report of the British Empire Cancer Campaign shows how continuous has been the work of research during the past year. If no new fact of striking importance has been brought to light, the intensive cultivation of ground already won promises well. A feature of the report concerns the work being done in treatment by radium and x-rays. The fact that the degree of success achieved in different areas seems to have varied widely shows how much remains to be learned.

The Problem of Mental Deficiency

In the report of the Mental Deficiency Committee, just issued, it is estimated that the total number of persons in England and Wales mentally defective in the true sense is at least 300,000 (not including the 35,000 children whose defect is educational rather than social). This is equivalent to an incidence of mental defect of eight per thousand of the total population. A difference in incidence in mental deficiency between urban and rural populations is shown. "The mean incidence of defect for all ages in the urban areas was 6.49 per thousand of population, compared with 10.66 in the rural areas. There is evidence that this disparity is connected with the problem of rural depopulation and with other important social problems." The committee recommends "that local mental deficiency authorities should make far more use of the existing forms of community care; that they should make them a reality by more thorough and systematic organization of the supervision of defectives, and that the obligation to provide training and occupation in all cases requiring it should be enforced."

Dealing with the three principal methods suggested for the control of mental defectives—sterilization, segregation and socialization, the report says that they are not mutually exclusive, but that the last two at least are essentially complementary. If sterilization of all adult mental defectives were carried out, the committee states, the reduction in the numbers of mental defectives in the next generation would not be great. There are many obstacles to the legal sterilization of the mentally deficient, such as difficulty of diagnosis and prognosis, and of drawing the line of demarcation between those who should and should not be sterilized. Such legal sterilization would not remove the need for greater institutional accommodation. The committee believes that legalized sterilization would greatly enhance the difficulty of bringing defectives within the scope of the Mental Deficiency Acts, for there would be a tendency of the parents not to inform the authorities of a defective child. Segregation, the second suggested method, would be too costly to be practicable, which leaves "socialization"—that is, a careful training of defectives—as the only practicable alternative.

However, at Birmingham, Mr. Justice McCardie commented earnestly on the question of mental defectives, after a woman, alleged to be so affected, and who had had eight illegitimate children, had been brought before him. He said: "The children as they grow up may become the parents of other illegitimate and feebleminded children, and so increase the appalling

figures." Following the appearance before him of an alleged feebleminded youth, the judge said: "I have long come to the conclusion that the people should face the need for a system of sterilization."

Industrial Effects of Boredom

There has been issued by the Industrial Fatigue Research Board a report on "The Effects of Monotony in Work" by S. Wyatt and J. A. Fraser, assisted by F. G. L. Stock. The following conclusions have been reached. Boredom is fairly prevalent among operative employment on repetitive processes. Of the forty-nine operatives concerned in this inquiry, only thirteen were able to state that boredom was seldom or never experienced. Boredom causes a reduced rate of working which is particularly noticeable about the middle of the spell. This decrease usually lasts from one to two hours, and during that time the average reduction in the rate of working varies from 5 to 10 per cent. It is followed by a steadier and improved rate of working as the end of the spell is approached. The amount of boredom bears some relation to the degree of mechanization of the task. It is less liable to occur when the work is entirely automatic. In such cases thought can be detached from work and directed to more interesting subjects, or utilized in conversation with other workers. If, however, the mind is not distracted in this manner, boredom can be very intense, as when attention is entirely concentrated on the task. In such cases unexpected and varied situations frequently arise and the operative has no time to dwell on unpleasant features associated with the conditions of work. It is most marked in semiautomatic processes which require enough attention to prevent mind-wandering but not enough for the complete absorption of mental activity. Continued exposure to monotonous conditions of work causes adaptation to such conditions, so that work which initially is tedious and unpleasant may afterward be tolerated or even mildly enjoyed.

New Campaign Against Malaria

At the Ross Institute Sir Malcolm Watson opened a discussion on how the committee could best help tropical industries with their malarial problems. He emphasized that without an exact knowledge of the habits of the mosquitoes it was difficult or impossible to deal with them. "In one area," he said, "jungle has to be cleared and the disease disappears entirely; in another, jungle must be preserved over streams to control malaria. Water is taken underground in subsoil pipes in one place; and in another open drains suffice. Sometimes it is cheaper to remove buildings and exterminate the mosquitoes which cause the malaria. In India many physicians still believed that it was impossible to control the mosquito economically anywhere; and that had been the accepted opinion until recently. In Assam comparatively little had been done, although the disease was widespread and destructive. The remedy is to get estate physicians, managers, engineers, to come to the Ross Institute when on leave and learn what can be done to control malaria."

Sir Malcolm proposed that the committee should direct its energies principally to industrial concerns, though any government physician or official was welcome at the institute, either to obtain advice in the malaria department or to have free facilities to use the research laboratories. Speaking of malaria in Bengal, Sir Malcolm said that it was only within the last seventy years that malaria had spread in a severe form in Western and Central Bengal. There are two opinions as to the cause of the disease, he said. One is that the embankments prevent flooding, which is nature's way of controlling mosquitoes there. This party says that embankments must be removed. The other opinion is that embankments are necessary, and drainage, not flooding, is required. Bengal will follow the way of Ceylon unless malaria is controlled soon. Two thirds of Ceylon is now uninhabitable on account of malaria.

PARIS

(From Our Regular Correspondent)

July 31, 1929.

The Fourteenth French Congress of Legal Medicine

The fourteenth French Congress of Legal Medicine was held at the Institut médico-légal in Paris. The opening session was in charge of Dr. Oberkirch, undersecretary of state to the ministry of health. The president of the congress was Professor Sorel of Toulouse, who was assisted by three vice presidents: Professors Michel of Paris and Naville of Geneva, and Dr. Desclaux of Nantes. MM. Etienne Martin of Lyons and Piédelièvre of Paris were secretaries of the congress. Many French and foreign physicians attended the meetings; among others, Professor Balthazard, Drs. Duvoir, Dervieux, Brouardel and Leclercq of Lille, Parisot of Nancy, Heger-Gilbert, De Laet and Vervaeck of Brussels, Heuyer and Philippe of Paris, Simonin of Strasbourg, and representatives of the courts of justice, the prisons and the prefecture of police.

SUDDEN DEATH

The first topic, the medicolegal aspects of sudden death, was presented by MM. Heger-Gilbert of Brussels, Laignel-Lavastine and De Laet. The speakers pointed out the various significations that may be attributed to the term "sudden death": instantaneous death, rapid death and unforeseen death. In general, the subject should embrace all the cases of rapid death that cannot be foreseen. The percentage of such sudden deaths will vary, evidently, with the milieu, the facilities for securing medical aid, and the available means of diagnosis. It may be safely affirmed that, with the progress of science, the percentage of sudden unforeseen deaths will be lowered. Heger-Gilbert took up first the various causes resulting from changes in the central nervous system or in the condition of the meninges. In this connection, the authors discussed the action of anemia or cerebral congestion as a possible cause of death. Very often, at the necropsy, the medicolegalist finds evidence of blood stasis that had occurred before death. They recalled also the cases of sudden death due to meningitis—tuberculous or suppurative cerebral abscesses, cerebral and cerebellar hemorrhages, tumors, and epilepsy. With regard to the mechanism of death due to concussion of the brain, various theories have been advanced in explanation of it, such as the theory of shock or of lesions of the nerve elements.

M. Laignel-Lavastine developed the part of the joint presentation, which dealt with sudden death due to the neuro-endocrine-humoral mechanism. He pointed out that many disturbing deaths—sometimes instantaneous, and sometimes occurring after an insignificant traumatism—are due to that mechanism. This is likewise the explanation for death due to inhibition, which may be produced experimentally by the excitation of the peripheral ends of the vagus nerve. Of all the nerves of the organism, including the cranial nerves, the vagus nerve has the most direct action on the pathogenesis of sudden death. The author referred to the recent researches of Hering on the sinus caroticus reflex, which establish that compression of the sinus caroticus produces a depressor reflex. It therefore appears probable that a traumatism of the side of the neck, at the level of the bifurcation of the carotid artery, may cause death. As other forms of inhibition that may be fatal, owing to the stimulation of the vagus nerve, may be mentioned traumatisms affecting the stomach, the laryngeal region, and the nasal region. Depending on the state of equilibrium of the neurovegetative nervous system, the individual is more or less sensitive to shock. In many cases a slight traumatism, if repeated in identically the same manner, may cause a fatal shock at a given moment. One is struck with the fact that a great number of deaths due to inhibition occur during the digestive period.

The speaker discussed then the rôle of endocrine disorders. He took up afterward (as due to the same neurohumoral

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mechanism) fatal accidents caused by the injection of various substances—proteins or colloids—into the blood or the tissues. The notions of anaphylaxis and colloidoclastic shock, as described by Widal and his school, apply to such accidents. After having, in collaboration with the other speakers, considered the cases of sudden death due to various lesions of the heart and the circulatory system (ventricular fibrillation, rupture of the heart, apoplexy), or to changes in the respiratory and digestive apparatus, Laignel-Lavastine called attention to the work of M. Philippe on the physicochemical conception of sudden death. The latter recalls the researches of Auguste Lumière on the application of the notion of flocculation to the problems of anaphylaxis, immunity and sudden death. He outlines the principal conclusions and shows that death due to inhibition may come under the head of shock due to stimulation of the nerve terminals or of the sympathetic plexus. But this shock, which is usually immediate and transitory, may be delayed and grave, if it is complicated with colloidoclasis.

M. Tournel gave the percentage of sudden deaths in aged persons as fourteen out of 300, or nearly 5 per cent. Among the most frequent causes may be mentioned pulmonary edema and rupture of the heart. M. Naville referred also to sudden death due to a pathologic state previously unsuspected: syphilitic aneurysm of a cerebral artery, for example.

CRUELTY TO CHILDREN

In their paper on the subject of "Cruelty to Children," Parisot and Caussade considered the forms of cruelty most commonly encountered, and pointed out the methods of investigation that may aid the medicolegalist in his search for symptomatic lesions resulting from ill treatment—also the measures to be taken to prevent cruel treatment of children. It is only by energetic preventive action that the number of cases of cruelty to children may be reduced. Modern societies realize fully their duties toward the child—in the workshop and at school. Inspectors of labor, school physicians and the school visiting nurses all protect children who have passed out from maternal vigilance. The results are effective. The method should, however, be extended, and, going beyond the schools, it should be taken into the homes and should aid, with kindness and mildness, in the moral and hygienic education of the family. According to the opinion of some, the organizations specially constituted for the protection of children should be given the right to take court action, if necessary, to punish those responsible for misdemeanors against children.

THE PRENUPTIAL CERTIFICATE

MM. Vervaeck of Brussels and Leclercq of Lille presented a comprehensive paper on essential data pertaining to medical examination preceding marriage. The prenuptial medical examination, the authors conclude, appears to be an eminently desirable eugenic measure, capable of a sanitary influence on society in general and an effective prophylaxis against degeneration, disease and moral degradation. The essential point is to discover how it can be generally introduced under conditions safeguarding the liberty of the individual and the welfare of society. Three possible methods were discussed: (1) a legal obligation requiring a certificate attesting the aptitude for marriage and the absence of all hereditary or contagious disorders, the speakers being opposed to such legislation, as it would seriously impair the liberty of citizens, without giving them definite scientific protection; (2) eugenic publicity campaigns, carefully planned and persistent, and finding their best support in a medical body convinced of the utility of such a measure and protected in their application—an excellent method, which the speakers endorsed without reservation—and (3) a legal obligation on the parties who are engaged or are contemplating marriage that they shall have consulted a physician on the subject of marriage. Dr. Vervaeck prefers the third solution, which also is moderate and which has likewise an educative bearing. The speakers insist, above all, on the following points: (1) The prenuptial medical examination should be generally introduced; it should be made at the time of the engagement, and it is desirable that it should be supplemented at the time of marriage, either by a declaration of the contracting parties to the effect that they have not contracted any contagious disease since the first examination, or by a new control examination; (2) the parties to the marriage contract should be subjected to a prenuptial examination; they should communicate to each other the results of the examinations, and the decision in the matter should be left to them, and (3) in the delivery of prenuptial certificates, the right of privileged communication should be strictly upheld.

THE ACCOUNTABILITY OF EPILEPTIC PERSONS

M. Cellier, the author of the paper on "The Penal Accountability of Epileptics," discussed the means at the disposal of the medicolegalist for establishing the diagnosis of latent epilepsy, and emphasized in particular the value of the newer biologic and experimental researches (crises provoked by the injection of precipitating substances, for example). Epilepsy, owing to the disorders of intelligence and of character that it provokes, and on account of the state of social inaptitude that it produces in persons affected, is often the cause of multiple misdemeanors. Within the range of the present penal code, the medicolegal expert cannot do otherwise than accept the fact that a delinquent epileptic patient has a diminished accountability. However, epilepsy must not be systematically regarded as furnishing a guarantee of total impunity. The declaration of diminished accountability appears therefore as an inauspicious solution. One cannot always intern epileptic persons, who, as long as they are free from attacks, are by no means insane; yet if they are criminally inclined, they cannot be left without surveillance. Great improvement would be brought about by introducing into the penal code provisions by which special aid might be given epileptic patients. The author referred to the efforts put forth in Belgium, and then outlined a program of medicosocial aid, which would enable them to live in special centers, where they would be furnished remunerative work but would be under medical supervision.

AUSTRALIA

(From Our Regular Correspondent)

Aug. 3, 1929.

The Proposed Change in Location of the Melbourne Hospital

It is natural that a city having a present-day population of more than a million and which, less than a century ago, was open country should have a difficult problem in the provision of hospital accommodation. That the passage of time will increase the problem is indicated by the forecast of the Victorian government statistician that the population of Melbourne will have doubled itself thirty-two years hence.

The original grant of land for hospital purposes on what was then the outskirts of the city has proved quite incapable of supplying the increasing hospital bed demands of the growing community. The present building contains 372 beds with a large outpatient and other departments. Without adding one more bed to the existing hospital, the architect's estimate for urgent extensions was £372,000. A fortunate feature of the problem is the increase in the value of the present hospital site consequent on the growth of the city around it. It has been considered that the sale of the site would realize from £700,000 to £1,000,000.

Sixty-five years ago the University of Melbourne asked that a hospital be placed in the vicinity of its medical school, and ever since then the debate has raged as to the expediency of rebuilding the hospital on a site that would be farther from

the center of the city but more suitable for expansion in accordance with the growing population. The state ministry has decided that the hospitals of the metropolis should enlarge to a community basis. The Melbourne hospital as it stands today is unable to do this. Thus the solution of the problem is to remove the hospital to a more suitable site, and this decision has been arrived at by the Melbourne hospital committee and the state government. It has been practically decided that 12 acres of what is usually known as the "pig market site" will be granted to the Melbourne hospital authorities in exchange for the present hospital property (in spite of its name the new site is eminently suitable for hospital purposes). Plans are being prepared for a hospital of 700 beds at a cost, including all services, of £1,000 per bed. The first departments to be transferred will be the outpatient, the medical electrical, the dermatologic, the roentgenologic and the power unit. It is considered that the complete transfer of the hospital will occupy five years.

Substantial increases in the number of surgical and medical beds are proposed, and also greater accommodation for all the special departments of the hospital. It is proposed to increase the number of surgical beds from 181 (the present number) to more than 200, and the medical beds from 146 to 180. Other increases proposed include gynecology and obstetrics, from six to thirty beds; eye, ear, nose and throat, fourteen to forty; skin, four to twelve; psychiatry, twelve to twenty-four, and radium, fourteen to twenty-eight. In addition, sixteen beds will be provided for orthopedic cases for which there is no special provision at present; a new ward of about fourteen beds for diabetic cases is contemplated, and there will be a refractory ward, and a children's ward for cases which cannot be dealt with at the children's hospital.

As soon as a title deed to the new site has been granted the removal of the hospital will be commenced. It is considered that the cost of removal and rebuilding will be more than financed by the sale of the present site. The ultimate hospital is expected to compare favorably with hospitals in other large cities of the world. The new hospital will be situated at a distance of about half a mile from the medical school of the University of Melbourne.

Deafness "Cure" Advertising Matter Banned

A proclamation has been issued by the department of trade and customs of Australia prohibiting the importation of all advertising matter supplied by the Dr. W. O. Coffee Company, Iowa, U. S. A., and Ontario, Canada. The minister for the department has explained that this action has been taken as a result of information received as to the manner in which this business is conducted and for the protection of the public against exploitation by an overseas organization conducting a very extensive advertising campaign by mail order of a "cure-all" for deafness. The preparation is offered to all and sundry irrespective of whether it is in any way suited to their condition, and has been found to contain only recognized remedies which might ordinarily be prescribed by medical practitioners in certain simple cases.

Rural School Dentistry in New Zealand

Consideration is being given by the minister for education in the dominion to the establishment of traveling dental clinics to provide for the needs of rural school children. Some years ago there was such a clinic operating in the rural districts of Auckland board area, but the department of health had stopped the arrangement on the score of expense.

Stimulated by the good results of the rural dental service provided in Queensland, the health department has reopened the question, but the expense still remains a problem. The department maintains that the service is impracticable because of its cost. In some areas, a modified service has been provided whereby a dentist employed by the department goes from school to school, making a small charge for the treatment required. Dental nurses are being more extensively employed to carry out preliminary surveys, and to refer those needing treatment to a school dentist working at a central point for the area.

The education department has ruled that dental treatment shall be as far as possible made available to the pupils of the registered private schools as well as to those attending the free schools conducted by the government.

BELGIUM

(From Our Regular Correspondent)

July 20, 1929.

Proposed Changes in the Medical Curriculum

During the discussion of the bill pertaining to the conferring of academic degrees, the Belgian house of representatives adopted a number of changes affecting the medical curriculum. The course in medicine will cover seven years of study. The first three years is preliminary and covers the natural and the medical sciences. The preliminary or premedical course includes the following ten subjects: philosophy (logic, psychology, ethics), experimental physics, elements of zoology (including the main ideas of comparative anatomy), general chemistry, elements of botany, elements of embryology, human anatomy (descriptive and topographic), histology (general and special), experimental physiology (general and special), and physiologic chemistry.

The laboratory work in anatomy consists in ordinary and microscopic demonstrations; in histology, in microscopic demonstrations. Examinees may request to be interrogated also on the following subjects: elements of mineralogy, geology and physical geography, and elements of analytic geometry and infinitesimal calculus.

The examination for the degree of doctor of medicine, surgery and obstetrics includes: general pathology and therapeutics, elements of pharmacology and pharmacodynamics, pathologic anatomy, special pathology and therapeutics of internal diseases (including mental diseases), surgical pathology and therapeutics (general and special), theory of obstetrics, public and private hygiene, bacteriology (including the elements of parasitology), the elements of legal medicine and the principles of medical deontology, clinical medicine, clinical surgery, theory and practice of surgical operations (including topographic anatomy), clinical obstetrics, clinical pediatrics, elements of clinical ophthalmology, elements of clinical otorhinolaryngology, elements of clinical dermatology and syphilology, elements of clinical psychiatry, elements of clinical gynecology, and elements of clinical urology.

In branches that are not made the subject of a clinical examination the examinees are given at least three practical tests. They may be required to take also a test in the elements of stomatology; also in tropical diseases.

The foregoing subjects require at least four years of study and are covered by four examinations.

No one may present himself for the third examination unless he can show, by certificate, that he has successfully participated, for at least two years, beginning with the time when he secured the rank of candidate in the natural and the medical sciences, in the work of the medical, surgical and obstetric clinics.

No one may present himself for the fourth examination unless he can prove, by certificate, that he has performed the duties of a hospital intern for at least a year.

The examinees who have not served as hospital interns are required, in order to be admitted to the fourth examination, to show by certificate that they have spent a regular "stage" of at least four months in each of the three principal clinics and four months in one or more accessory clinics.

The total amount of time spent in these stages must be at least twelve months. One may, as a rule, do the work of two stages concurrently, but the stages of medicine and surgery may not be taken at the same time.

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The clinical certificates are signed and delivered by the professors of the university clinics or by the heads of the hospital services.

The candidate for the degree of licentiate in the dental sciences must furnish evidence of (1) having done the work in the natural and the premedical sciences, and (2) that he has had two years of study (and has taken two examinations) in general pathology, pathologic anatomy, elements of pharmacology and pharmacodynamics, bacteriology (including the elements of parasitology), pathology and therapeutics of the mouth and clinical stomatology, operative dentistry, buccal prosthesis and orthodontia. The examinees are required, furthermore, to take at least one practical test bearing on clinical stomatology, operative dentistry and buccal prosthesis.

No one may present himself for the second examination unless he can show, by certificate, that, beginning with the time when he secured the rank of candidate in natural and premedical sciences, he has successfully participated, for four semesters, in the course in clinical stomatology and taken part in the practical work in operative dentistry, buccal prosthesis and orthodontia.

The certificates referred to in the forgoing are signed and delivered by the professors of the university clinics. If they emanate from a dental clinic, they must be approved by the faculty of medicine of a university or by the directors of institutions whose students present themselves for examination before special boards—institutions that have been approved by the central government.

The examination for the title of agrégé of higher instruction includes (1) the preparation of a dissertation that must be an original scientific work that constitutes a contribution to the progress of science, and the presentation of theses or of accessory questions (the examinees have free choice of subjects for the dissertation or of accessory questions); (2) the defense before the examining board of the dissertation and the subjoined theses or questions, and (3) an oral lecture on a subject chosen by the examining board.

Women may obtain academic degrees. They may, furthermore, enjoy the rights that are attached to these degrees, unless these are contrary to the legal provisions applicable to certain public duties.

Blind Masseurs

Mr. J. Cohen has been seeking in Belgium the approval of eminent medical men in the four Belgian universities of a plan to establish in Belgium: (1) a central school, under the approval, authority and direction of the state and of competent members of the medical profession, for furnishing complete instruction in massage to blind persons—men and women judiciously selected; (2) an advanced diploma, the same for all of Belgium, to be delivered to the blind and to persons who can see, pupils of the school mentioned who have pursued the courses with profit and obtained grades of at least 50 at an examination officially organized, before a board composed of representatives of the various administrations concerned, and (3) an association of certificated blind masseurs similar to the association existing at present in England, the purpose of which is the supervision of its members—their well-being, and the defense of their general interests.

At present, the National Institute for the Blind Association of Certificated Blind Masseurs gives in England entire satisfaction to the medical profession and the general public, by assuring the training of blind masseurs who are competent and reliable.

It is to be hoped that the campaign undertaken by Mr. Cohen from altruistic motives will meet the approval of the public authorities. Such an institution would convert a number of blind persons into useful and independent citizens, and would diminish, at the same time, the financial and social burdens of the state and the communes.

ITALY

(From Our Regular Correspondent)

Aug. 14, 1929.

Compulsory Insurance Against Occupational Diseases

By a recent legislative act, compulsory insurance of workmen, which was already in force with reference to pulmonary tuberculosis, has been extended to occupational diseases. The following diseases have been recognized thus far: intoxications from lead, mercury, phosphorus, carbon disulphide, benzene and homologous products, including ancylostomiasis contracted while working in mines, tunnels and around brick-kilns. For each disease a maximal period that may elapse between cessation from the type of work involved and the onset of the occupational disease in question is established. In case of permanent disability amounting to at least 20 per cent, the workman will receive a pension. The employer is required to provide for the insurance of his workmen and to report promptly to the insurance bureau any case of occupational disease that they contract.

Inquiry on Tuberculosis in the Industries

The municipal health service of Milan is instituting an inquiry on the relations between tuberculosis and the industries. The inquiry was promoted by the Red Cross League, it being the plan to adopt effective measures to protect the health of the workmen against tuberculosis. The first step in the inquiry consisted in the investigation of the Società Pirelli, a representative firm of the rubber industry, the results of which will soon be published.

Colonial Institutes at the Universities

With the object of informing university students on conditions in the colonies, special colonial institutes have been created at the universities. Instruction will also be offered in sanitary hygiene and the prophylaxis of tropical infectious diseases.

The League for Combating Cancer

The new administrative council of the Lega italiana per la lotta contro il cancro has selected Prof. Alessandro Lustig, senator, director of the Istituto di patologia generale of the University of Florence for president. Profs. Maurizio Ascoli of the University of Catania and Raffaele Bastianelli of Rome have been chosen vice presidents.

The Prevention and Treatment of Invalidity

The Cassa nazionale per le assicurazioni sociali has published its annual report on its own activities in the field of the prevention and treatment of permanent disability, both partial and total. During 1928, special colonies for treatment functioned at the bath resorts of Salso Maggiore, Battaglia and Lido di Venezia, under the direction of Professor Poni. To these colonies, 2,708 employees and workmen insured in the Cassa were admitted and cared for at an expense bordering on 1,000,000 lire, or about $50,000.

Prophylactic Vaccination of Cattle Against Tuberculosis

The general management of the Sanità pubblica has recently called attention of the prefects to the good results secured by the Istituto vaccinogeno antitubercolare in Milan by the experimental vaccination of cattle against tuberculosis by the Calmette-Guerin method. At the conference of the health section of the League of Nations it was admitted that such vaccination is harmless for the vaccinated subject, while the strain of bacillus has immunizing properties against tuberculous infection—both natural and experimental. For this reason, the minister of the interior desires that in every province similar vaccination experiments on cattle may be carried out, in order that the method may be thoroughly tested and that, if found practicable, it may serve as prophylaxis. The animals vaccinated must be recorded in suitable registers. If they are slaughtered, a necropsy must be performed, together with a careful examination of the viscera for tuberculosis.

International Congress on Industrial Medicine

The permanent international commission on industrial medicine has selected Naples as the place of meeting of the International Congress on Industrial Medicine. The congress will be held next October and will take up the following subjects: (1) work in the seaports; speaker, Professor Castellino, director of the Instituto di medicina del lavoro in Naples; (2) work in the mines; speaker, Professor Ferrannini, director of the Clinica medica in Cagliari; (3) the biologic and the clinical aspects of the scientific organization of labor; speakers, Professor Aiello and Dr. Nebuloni of Milan. Professor Lattes of the University of Modena will speak on "Inconsistencies in the Compensation of Farm Laborers Who Are the Victims of Accidents." Communications will be accepted from persons attending the congress—both Italians and foreigners. The congress will be presided over by Professor Castellino.

New Appointments

Dr. Bruno Fornaciari, an authority on hygienic and sanitary problems, has been named general director of the Sanità pubblica as successor to Dr. Messea.

Generale Medico Umberto Riva, an outstanding surgeon and heretofore sanitary inspector in the Florence region, has been appointed general director of the Sanità militare as successor to General Calegari.

VIENNA

(From Our Regular Correspondent)

Aug. 8, 1929.

Professor Tandler's Impressions of America

Professor Tandler, the head of the public health service of Vienna and the prime mover in the great progress our city has made in recent years in sanitary and hygienic matters, returned recently from the United States and in an address before a group of sanitarians gave an account of his tour. He had been invited to present a paper at the International Hospital Congress in Atlantic City on the welfare arrangements of Vienna, the care of chronic and incurable cases, and the care of the insane. He was also the vice president of the congress. He emphasized that he met with abundant evidence of the high esteem in which Vienna as a medical center is held in New York and in America in general. At the congress, forty-three nations with a total of 4,000 representatives convened. Following the congress, a convention of American hospital women nurses was held in Montreal. It was attended by 7,000 nurses. The speaker stated that his film pictures illustrating the welfare arrangements of Vienna awakened great interest. At the conclusion of their presentation, which required an hour and a half, Mr. Shirley W. Wynne, the head of the public health service of New York City, expressed pleasure and satisfaction in what he had seen and heard. Professor Tandler mentioned that the hospital congress was attended by representatives of hospitals with a total capacity of 800,000 beds. For the purpose of comparison, he added that Austria has only 40,000 beds for patients, 23,000 of which are in Vienna. In contrast with Austria, hospitals in America are almost always erected and controlled by private corporations, so that in New York City less than 20 per cent of the hospital beds are under the administration of the municipality. With us, however, hospital ownership and hospital management are in the hands of the central government or of the municipality. Professor Tandler found all American hospitals extraordinarily well furnished and equipped. He discovered, however, that freedom of instruction in the United States exists only on paper because the university instructors are dependent on the political and religious views of the leading men of the governing board of the institution. They are employed on the basis of a contract that may be canceled at the end of any school year.

The next International Hospital Congress, at the invitation of our city, will be held in Vienna, in June, 1931.

Professor Tandler visited a large number of hospitals in America and studied their excellent equipment. As the principal event of his tour he referred to the combating of diphtheria by means of extensive inoculation of children. In the same manner as Professor Park, in cooperation with Professor Schick (also a Vienna physician), has done in New York, he is planning to launch a general campaign against diphtheria with the aid of the Park mixture of diphtheria toxin and antitoxin. In Auburn, N. Y., which has a population of 35,000, diphtheria has been absolutely eliminated, owing to the fact that, for a number of years, systematic vaccination has been carried out. Professor Tandler hopes that it will prove possible to eradicate the disease in Vienna, especially from the schools. With strictly enforced school attendance, it would appear easy to carry out such a plan of action.

Professor Tandler thought he would be able to induce Professor Schick to come soon to Vienna and take an active part in the carrying out of the plan of inoculating all the children of Vienna against diphtheria. In his opinion, the vaccination is given most suitably in the last quarter of the first year of life—in the consultation centers for infant welfare but also in the schools as well. The immunity conferred is for life.

Professor Tandler was much impressed with the strong financial status of the well qualified practitioner in the United States. His income, taken not only in the absolute but also in the relative sense, is in every instance much greater than in Austria. The eagerness for knowledge is seen in the frequent journeys to Europe (Vienna, Berlin, Paris), to participate in the postgraduate courses. Vienna, especially, is still the Mecca of the American physician.

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NETHERLANDS

(From Our Regular Correspondent)

July 13, 1929.

The Twenty-Fifth Anniversary of the Medical Inspection of Schools in the Netherlands

On the occasion of the twenty-fifth anniversary of the organization of the medical inspection of schools, Dr. Van der Loo published recently an account of the results secured thus far. From the start, the idea had its defenders but also its opponents. Among the latter, one of the most ardent was A. Dirk, a teacher in Leyden, who regarded the intervention of the school physician in the hygienic care of children, which in his opinion belonged solely to the parents, as an attack on parental authority. He feared the disturbance and friction that such an innovation would likely provoke; the harmful influence on the characters of the children of having too much attention paid to them, and, finally, he warned against complications that might arise from an undue confraternal spirit developing between the school physicians and private persons. This criticism served the good purpose of neutralizing, as it were, the exaggerated hopes and the far-reaching demands of the advocates of the measure. Since the law went into force in 1900, everything has been done (and rightly so) to combat infectious diseases in the schools. Some examples may be of interest:

Favus: This disease, which at Zaandam affected seventy children out of 2,500, was soon conquered by hygienic and active treatment.

Pediculosis: Satisfactory results have been secured without making shaving of the head compulsory.

Trachoma: This disease, which had been endemic in the region about Amsterdam, has been eradicated through the instrumentality of the school hygienic service of that city.

Whooping Cough, Measles, Scarlet Fever and Diphtheria: Dismissal of the children and the suspension of school during the period of incubation of the disease do not accomplish any

results. Only the collaboration of the school physician with the hygienist, who is able to survey the whole commune, makes it possible to combat effectively the epidemics of these diseases. Immunization of children against diphtheria and scarlet fever by the specific antitoxin has given good results at Zaandam.

The Spanish Influenza: In Amsterdam the closing of places of amusement and other gathering places had no influence on the course of the disease.

Venereal Diseases: The danger from contamination with syphilis or gonorrhea is very slight in the primary schools. In the *école gardienne* it is greater. Gonorrheal vulvovaginitis is rather frequent in little girls, but it is benign and disappears with the onset of puberty.

Tuberculosis: The mortality from tuberculosis among the school children is very slight, hardly amounting to one case of active tuberculosis in 1,000 pupils examined. A more serious question is whether or not to remove from the schools all teachers with active tuberculosis. They constitute a permanent danger for the pupils, but no satisfactory solution of the problem has been proposed.

But there are other questions in which the school physician must take an interest. For example, the school colonies and the open-air schools have a great influence on the treatment of weakly children.

Ear Disorders: In 1912, an incurable deafness was discovered in one out of every thousand pupils. In 1927, a new examination revealed that the number was much reduced. The diminution of this disorder is doubtless due to the activities of the school physicians.

Growth and Nutrition: These two factors were studied in many researches. It was found that the children of the poorer classes were, on the average, shorter and lighter in weight than those of the well-to-do classes. In the case of the poor, this was due to chronic undernutrition. The children of the rich, on the other hand, remind one of hothouse plants—tall but often lacking in physical vigor and stamina. More sons of the rich than of the poor are discharged from military service on account of impaired health, and one finds also more weakly children in institutions patronized by the rich; however, when adjustment is made for the difference in ages, children of the various social classes and of the same height present the same weight. The retardation in growth is caused by defective alimentation. That comes out very clearly when one compares the statistics established for the height of children before the war with the statistics collected for children born during the war. On the basis of a comparison between the height and the weight of a large number of children, a constant relation may be established that will serve as a criterion for the determination of the state of nutrition of children in general. But for the determining of the conditions of nutrition in a restricted number of children, the factors of height and weight are not sufficient to furnish a clear idea. For that reason, a third factor for the determination of the indexes has been introduced: the chest measurement. The author has established that, if the height increases by 3 cm., the chest measurement should increase 1 cm. The chest measurement of little girls is 1.5 cm. less than that of the boys. According to the calculations of the author, this difference in chest measurement corresponds to a 5 per cent difference between the weight of the boys and the girls.

Illustrative Tabulation

Height, cm....	122						137						
Chest, cm...	56	57	58	59	60	61	62	63	64	65	66	67	68
Weight, Kg.	21	21.8	22.6	23.4	24.2	25	25.8	26.9	27.9	28.9	29.9	30.9	31.9	32.9

On the basis of the three factors height, weight and chest measurement, the author has prepared a series of tables from which it is easy to determine whether or not a given child is in a good state of nutrition. The measurements show wide variations in the weight of children of a given height. However, a variation of 5 per cent above or below the normal weight may be allowed.

It will be seen, on consulting the illustrative tabulation, that a boy with a height of 122 cm. and a chest measurement of 61 cm. should weigh, normally, 25 Kg., and that if he weighs only 23 Kg., he is 2 Kg. underweight. The physician attached to a school system may furthermore make a special study of the hygiene of the *écoles gardiennes*, the middle schools or of the schools for backward children. He may be also a valuable counselor in the choice of a life calling.

The Mortality in Amsterdam

The statistics collected by the Bureau des statistiques médicales du service sanitaire et hygiénique can be reported more promptly than usual, owing to the double sets of death certificates that the physician, since 1927, has been obliged to furnish, one of which is transmitted to the civil government and the other to the bureau of statistics. By thus decentralizing these services, it has been possible to establish a close collaboration between the civil physicians and the various bureaus located at Amsterdam, Utrecht, Leyden, The Hague and Rotterdam.

For 1928, the birth rate, including stillbirths, was 18.8 per thousand population. Of the total number of children born during the year (13,902), 372, or 2.7 per cent, were stillborn. The causes of the stillbirths were distributed as shown in the adjoining tabulation.

Causes of Mortality in Stillborn Infants

	Number	Percentage of Total
Syphilis	8	2.2
Albuminuria and other disorders associated with pregnancy	53	14.2
Various diseases of the mother	12	3.2
Disorders of the placenta and membranes; for example, placenta praevia	42	11.3
Disease of the fetus and other causes of premature birth	53	14.2
Defective conditions under which the birth took place (deformation of the pelvis, prolapse of the umbilicus, etc.)	101	27.2
Unknown or unmentioned causes	103	27.7
	372	100.0

The mortality is higher in winter (January, 758; December, 712) than in summer (June, 482; July, 458), out of a total of 6,691 for the whole city.

On comparing the mortality for the various periods of life, one notes that it is relatively high during the first year of life, declines then to a minimum that is reached between the ages from 6 to 14, and then gradually rises to a maximum in the advanced ages.

Measles claimed fewer victims in 1928 (forty) than in 1927 (ninety-nine).

Scarlet fever prevailed as an endemic disease but caused only six deaths.

Whooping cough made itself known, especially among children under 1 year of age, for which group the mortality was as high as for the ages 1 to 4 taken together. The total number of deaths was forty-eight.

Diphtheria caused twenty-two deaths (thirteen children). The fatalities from influenza were reduced from 186 in 1927 to 118 in 1928.

Pulmonary tuberculosis is especially fatal between the ages 15 to 19 and from 20 to 29. The total number of deaths due to this cause was 421. The greatest number of deaths (938) resulted from malignant tumors.

The mortality due to diseases associated with pregnancy and childbirth (puerperal fever) was somewhat higher (64) than in 1927.

Of the 13,902 births, 4.6 per thousand resulted fatally for the mother. Abortion was the chief cause of death for the mother (10). There were nineteen cases of puerperal fever, many being the result of abortion.

There were 230 fatal accidents, 11 per cent involving children between the ages of 1 and 6.

Of the 13,530 children born alive, 586, or 43.3 per thousand, died during the first year of life; 296, or 21.9 per thousand, during the first month of life; 241, or 17.8 per thousand, during the first week of life, and 146, or 10.8 per thousand, during the first day of life. Of the last mentioned, seventy-two cases were due to facial atrophy and fifty-five to the incidents of birth itself.

From the foregoing figures, one may conclude that it is mainly the various prenatal factors influencing the child's existence that are the cause of the mortality in nurslings.

BERLIN

(From Our Regular Correspondent)

July 27, 1929.

Growth of Population in Germany

The excess of births over deaths in Germany, in 1928, according to the provisional report issued by the federal bureau of statistics, was 442,889, or 7.0 per thousand of population, an increase of 38,190 over the excess for 1927, which was 404,699, or 6.4 per thousand inhabitants. However, from the excess of 442,889 must be deducted the tranoceanic emigration amounting to 56,586, which leaves a net increase in population of 386,303. The population of the German *reich*, exclusive of the Saar region, on Dec. 31, 1928, was therefore 63,811,000, as compared with 63,424,000 at the beginning of the year. Including the Saar region, the total population of the *reich*, at the close of 1928, may be estimated at 64,600,000.

The Significance of Grenz, or Borderline, Rays

The rays with the longest wavelengths, located at the end of the roentgen spectrum, have been studied carefully in recent years by the roentgenologist Bucky (the inventor of the Bucky diaphragm), who left Berlin some time ago for New York, where he has been engaged in research work. His studies have revealed that these rays should not have been neglected so long, since in medical respects they are very promising. Bucky, who is at present back in Berlin for a time, recently discussed his discovery before the Berliner Medizinische Gesellschaft.

The grenz, or borderline, rays are, as the physicist views them, electromagnetic vibrations and scarcely to be differentiated from roentgen rays. Biologically speaking, they are of a peculiar nature, which justifies one in distinguishing them by a special term from the ordinary roentgen rays. In their effects on the living organism, they occupy a position midway between roentgen rays, properly so called, and ultraviolet rays. The immediate effect of the rays extends no farther than the skin, as they cannot penetrate the deep-lying tissues, being entirely absorbed by the skin. Nevertheless, the destructive action, in contrast with the roentgen rays, is entirely absent. The microscopic picture of a skin treated with grenz rays is entirely different from that of one treated with roentgen rays. During treatment, reddening of the skin develops much more rapidly than with roentgen rays. Pain is however, absent—even under high degrees of stimulation, which is in sharp contrast to painful roentgen burns. A further differentiation factor of great importance is the absence of the cumulative effect, which, in dealing with roentgen rays, sometimes leads to unpleasant results; for the effects of successive roentgen irradiations are cumulative when they strike one and the same part of the body, even though considerable intervals have intervened between the irradiations. This cumulative effect is not a characteristic of the grenz rays, which makes their application much easier and devoid of danger. In general, these rays may be said to possess a wide range of application. There is a wide difference between the effective and the dangerous dosage. Consequently, with a correct technic, the danger from the use of these rays is slight.

As regards the application of grenz rays in the treatment of various pathologic conditions, it will be necessary first to collect more extensive experiences before recommendations can be made. Thus far, it appears that weakened conditions of various kinds, and, in general, pathologic conditions susceptible to irritation treatment, react favorably to grenz rays—for example, gastric and duodenal ulcers, certain blood diseases that heretofore have been difficult to influence, weakened conditions of women, and the like. The effect is based apparently solely on the influence exerted on the skin, the functions of which, according to Bucky's view, will become better understood through the extended study of the grenz rays and their modes of action.

A New Braille Typewriter

At the instance and under the direction of Fräulein Mahler, librarian at the Deutsche Zentralbücherei für Blinde, a new portable braille typewriter termed the "Minerva" has been constructed for the use of the pupils of the Hochschul-Lehrmittel-Werkstatt für Blinde (workshop for the blind) in Leipzig. Owing to the practical efficiency of the six-point braille system of writing for the blind, which requires only six keys and a spacer, the typewriter has been reduced to a very small compass (5 by 12 by 15 cm.), with a weight of slightly more than 3 pounds (1.5 Kg.). To avoid frequent changing of the paper, the end of a roll of paper 14 cm. wide and 1 meter in length (when extended) is introduced into the carriage. The line spacing is accurately accomplished by means of two small rollers. If sheets are desired, the roll is perforated at suitable distances (25 cm.). The machine may be easily carried in a small case.

Researches on Maritime Climate

In an article in the *Deutsche medizinische Wochenschrift*, the Hamburg physiologist Prof. Otto Kestner gives the results of his recent researches on the therapeutic effects of the climate of the region bordering on the North Sea; particularly at Nordwyk, on the coast of the Netherlands. It is a matter of common knowledge that the therapeutic effects of a maritime climate are associated with the short-waved sun's rays that produce a tanning of the skin and favorably influence metabolism and blood formation. Kestner discovered that the value of the ultraviolet rays decreases rapidly when the sun sinks to a point less than 30 degrees above the horizon, as the rays are then largely absorbed by the atmosphere. These observations have been utilized also in connection with the types of glass, brought on the market in recent years, which permit the passage of almost two thirds of the ultraviolet radiation. The use of such glass is valuable only when the rays of the sun, high in the heaven, pass through such glass-panes as cover the roofs of solariums and hothouses. It should by no means be assumed that a person occupying a room with windows containing such glass will receive the same benefit that he does from a corresponding time spent in the open air, for the reason that other important secondary climatic factors, such as wind and temperature, are not operative. In fact, it would appear that the great influence that is commonly ascribed to ultraviolet radiation in connection with the therapeutic effects of maritime climate has been overestimated, for otherwise autumn and winter sojourns at the seaside would not be just as effective as summer treatments. Great importance must be attached also to the cooling and, at the same time, stimulating action of the wind, which action increases notably as the sea is approached. If protection against sun and wind is afforded, the temperature of the air on the beach may be tropical. Thus a maritime climate is highly stimulative, and the effect that it has also on the human psyche must be distinctly recognized.

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Marriages

GAIUS FABIUS BROOKS to Mrs. Lucy Peterman, both of Ysleta, Texas, at Mesilla Park, N. M., recently.

GEORGE FREDERICK CHRISTOPHER FASTING, Rochester, Minn., to Miss Mayme M. Dworak, July 26.

HAROLD L. REINHARD to Miss Alice Louise Anderson, both of Brooklyn, at Sciotoville, Ohio, August 3.

RUSSELL WILLIAM WOOD, Oakland City, Ind., to Miss Helen Pauline Barrett at Connersville, June 11.

ROLAND P. MACKAY, Chicago, to Miss Margaret Pomroy, at Rochester, Minn., July 31.

HARRY TEVEL ZANKEL to Miss Libbie Schachne, both of Brooklyn, June 30.

Deaths

Rudolphus William Gelbach, Hoboken, N. J.; University of Munich, Germany, 1881; member of the American College of Physicians; formerly on the staffs of the Christ Hospital, Jersey City, and St. Mary's Hospital, Hoboken; aged 72; died, August 2, at Keene Valley, N. Y., of recurrent carcinoma of the kidney.

Dalmar Rowley Blakeley ⊕ Capt., M. C., U. S. Army, Honolulu, T. H.; Medical College of the State of South Carolina, 1912; flight surgeon; served during the World War; entered the Medical Corps, U. S. Army, in 1919; aged 39; was shot and killed while in his quarters by some one unknown, August 3.

Rufus Rockwell Chilson, Elmira, N. Y.; University of Vermont College of Medicine, Burlington, 1876; member of the Medical Society of the State of New York; aged 81; on the staff of the Arnot-Ogden Hospital, where he died, July 19, of prostatism, pyelonephritis and arteriosclerosis.

Samuel A. Cox, Bardstown, Ky.; University of Louisville (Ky.) School of Medicine, 1885; member of the Kentucky State Medical Association; president of the Nelson County Medical Society; formerly member of the board of health; aged 68; died, July 25, of dysentery.

Emmett Cyril Dolan, Sacramento, Calif.; Creighton University School of Medicine, Omaha, 1925; resident physician to the Mater Misericordiae Hospital; aged 31; died, August 5, at the Colfax (Calif.) Sanitarium, of chronic pulmonary tuberculosis.

Edwin Smith Vail, Thompsonville, Conn.; New York Homeopathic Medical College, 1882; member of the Connecticut State Medical Society; aged 69; proprietor of a sanatorium bearing his name, where he died, July 18, of carcinoma.

Robert R. Dinwiddie, Rogers, Ark.; St. Louis College of Physicians and Surgeons, 1896; for twenty-seven years head of the bacteriologic department of the Arkansas state university, Little Rock; aged 71; died, August 3, of endocarditis.

Elmer Howard Best, Freeport, Ill.; Rush Medical College, Chicago, 1888; city health officer; served during the World War; on the staff of the Evangelical Deaconess Hospital; aged 64; died, July 3, of heart disease.

Charles John Morrison ⊕ Colebrook, N. H.; University of Vermont College of Medicine, Burlington, 1925; aged 29; was instantly killed, July 3, in an automobile accident.

Albert A. Webb, Manifest, La.; University of Louisville (Ky.) School of Medicine, 1894; aged 61; died, July 6, in a sanatorium at El Dorado, Ark., of heart disease.

James Albert Rippert, Duluth, Minn.; College of Physicians and Surgeons, Baltimore, 1910; aged 43; died, July 12, in a local hospital, of cerebral hemorrhage.

Albert Cooper ⊕ Columbus, Ohio; Cincinnati College of Medicine and Surgery, 1875; Columbus Medical College, 1877; aged 77; died, July 18, of pernicious anemia.

Clinton O. Brockman, Eldon, Mo.; American Medical College, St. Louis, 1896; formerly mayor of Eldon; aged 57; died, August 1, of perforated gastric ulcer.

⊕ Indicates "Fellow" of the American Medical Association.

Meredith D. Pugh, Lincoln, Ill.; Chicago Homeopathic Medical College, 1901; aged 52; died, July 1, at the Evangelical Deaconess Hospital, of jacksonian epilepsy.

Henry Paul Adams ⊕ Birmingham, Ala.; University of Georgia Medical Department, Augusta, 1901; aged 51; died, August 11, of carcinoma of the esophagus.

Clifton E. Miles, Evansville, Ind.; University of Louisville (Ky.) School of Medicine, 1888; aged 63; died, July 24, at the Deaconess Hospital, of angina pectoris.

Henry Arthur Pepin ⊕ Pullman, Mich.; University of Vermont College of Medicine, Burlington, 1890; aged 62; died, July 20, in Burlington, of carcinoma.

John Arthur Tenney ⊕ Boston; Jefferson Medical College of Philadelphia, 1883; aged 84; died, July 2, at the Elliot Hospital, of chronic cholecystitis.

Coleman Reed Ammerman, Colorado Springs, Colo., St. Louis Medical College, 1881; formerly mayor; aged 72; died, July 9, of chronic nephritis.

William Henry Fox ⊕ Chicago; Victoria University Medical Department, Toronto, Ont., Canada, 1886; aged 69; died, July 26, of angina pectoris.

Louis Weigert ⊕ Amsterdam, N. Y.; Medical Department of Columbia College, New York, 1876; aged 73; died, May 5, of carcinoma of the prostate.

S. Harper Cowan, Deweese, Neb.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1902; aged 61; died, June 30, of heart disease.

George Albert Brumfield, Jackson, Miss. (licensed, Mississippi, by the state board of health); aged 69; died, July 28, of parenchymatous nephritis.

Edward Lawrence Connor, Lethbridge, Alta., Canada; McGill University Faculty of Medicine, Montreal, Que., 1905; aged 48; died, May 14.

Joshua Newton Smith, Hampton, N. B., Canada; Medical Department of the University of the City of New York, 1881; aged 73; died, May 9.

David Judge McAnn, Colorado Springs, Colo.; Memphis (Tenn.) Hospital Medical College, 1899; aged 52; died, June 20, in a local sanatorium.

Morris A. Millard, Topeka, Kan.; University of Buffalo (N. Y.) School of Medicine, 1873; aged 81; died, July 13, of chronic heart disease.

William H. Stokes, Whittier, Calif.; Columbus (Ohio) Medical College, 1882; aged 74; died, July 19, of chronic nephritis and pyelitis.

Charles P. Spann, Thebes, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 79; died suddenly, July 28, of heart disease.

Mott Alvah Cummings ⊕ Winchester, Mass.; Harvard University Medical School, Boston, 1887; aged 67; died, June 23, of arteriosclerosis.

Addie Elizabeth Whitfield, Rochester, N. Y.; Hering Medical College, Chicago, 1894; aged 79; died, July 27, of angina pectoris.

Frank W. Hanna, Indianapolis; Medical College of Indiana, Indianapolis, 1902; aged 58; died, August 8, of acute dilatation of the heart.

Franklin Pierce Virgin, Weymouth, Mass.; Detroit Medical College, 1877; aged 78; died, July 13, of carcinoma of the esophagus.

Lyman Edward Ott, Franklin, Ind.; Jefferson Medical College of Philadelphia, 1882; aged 75; died, July 12, of heart disease.

Samuel H. Mitchell, Elk Creek, Va.; Medical College of Virginia, Richmond, 1885; aged 66; died, July 28, of heart disease.

Hubert Walton, Petersburg, Ky.; Hospital College of Medicine, Louisville, 1905; aged 60; died, July 17, of heart disease.

William P. Button, St. Louis; Beaumont Hospital Medical College, St. Louis, 1892; aged 70; died, June 20, of heart disease.

Lien A. Traphagen, North Branch, Mich.; Detroit College of Medicine, 1905; aged 54; died, July 20, of tuberculosis.

William Henry Alexander, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1894; aged 66; died, May 7.

Joseph Wallace, Elmer, Mich.; Detroit Medical College, 1884; aged 77; died, July 9, of cerebral hemorrhage.

Richard O. Watkins, Pinehill, Texas; Kentucky School of Medicine, Louisville, 1895; aged 75; died, April 11.

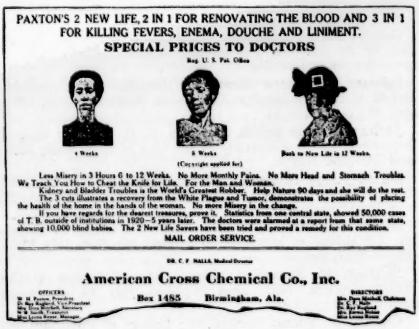
Bureau of Investigation

THE AMERICAN CROSS CHEMICAL COMPANY

The W. H. Paxton Fraud Is Debarred from the Mails

The American Cross Chemical Company is one of the trade names used by W. H. Paxton of Birmingham, Alabama, in the sale of his nostrums. Other names used are Pax American Cross Chemical Company and American Cross Bearers.

W. H. Paxton is a colored man, sixty years of age, who for some years has been engaged in selling two nostrums, "Pax 2 New Life Savers Compound Syrup of Fruit Juices" and "Pax 3 in 1 Healing Antiseptic and Liniment." When the government inspectors began looking into Paxton's quackery, they were unable to obtain the formulas, but Paxton did give a list of what he claimed were the ingredients used by him in making the preparations. The so-called New Life Saver Tonic was said to consist of a mixture of pineapple syrup, vanilla extract, extract of blackberries, glycerine and fluid extract of juniper berries. Paxton's "Healing Antiseptic and Liniment" was said to contain glycerine, fluid extract of pokeroot, oil of lavender flowers, oil of juniper berries, oil of sassafras and fluid extract


PAXTON'S 2 NEW LIFE, 2 IN 1 FOR RENOVATING THE BLOOD AND 3 IN 1
FOR KILLING FEVERS, ENEMA, DOUCHE AND LINIMENT.
SPECIAL PRICES TO DOCTORS
Reg. U. S. Pat. Office
4 Weeks
8 Weeks
Back to New Life in 12 Weeks.
(Copyright applied for)
Less Misery in 3 Hours 6 to 12 Weeks. No More Monthly Pains. No More Head and Stomach Troubles.
We Teach You How to Cheat the Knife for Life. For the Men and Women.
Kidney and Bladder Troubles is the World's Greatest Robber. Help Nature 90 days and she will do the rest.
The 3 cuts illustrates a recovery from the White Plague and Tumor, demonstrates the possibility of placing
the health of the home in the hands of the woman. No more Misery in the change.
If you have regards for the dearest treasures, prove it. Statistics from one central state, showed 50,000 cases
of T. B. outside of institutions in 1920–5 years later. The doctors were alarmed at a report from that same state,
showing 10,000 blind babies. The 2 New Life Savers have been tried and proved a remedy for this condition.
MAIL ORDER SERVICE.
DR. C. F. NALL, Medical Director
American Cross Chemical Co., Inc.
OFFICERS
DIRECTORS
Box 1485 Birmingham, Ala.

of blackberry. Paxton is alleged to have claimed that he purchased his ingredients from Sharp and Dohme, with the exception of certain fruit juices and extracts.

The two nostrums were usually sold together as one "treatment" at a price of $2.50, and Paxton has been disposing of about 24,000 bottles of the nostrums yearly. Paxton informed the federal officials that the business was incorporated, that he is president, his wife—Cassie Bell Paxton—secretary and treasurer, and one Roy Ragland vice-president. It was originally capitalized at $2,000 but the capitalization was later raised to $12,000, with Paxton as the sole owner.

Roy Ragland, who was described in the advertising as "Dr. Roy Ragland," is said to operate a drug store in North Birmingham, Alabama. Paxton also claims in the advertising to have associated with him one Dr. Charles F. Nall, a colored physician. According to the evidence submitted, neither Ragland nor Nall receive any payment for services but, according to Paxton, they were to share in the profits "when the business pays." To quote from the Memorandum of the Solicitor of the Post Office Department in his recommendation to the Postmaster General that a fraud order be issued against this concern:

"Paxton is not a doctor, chemist or pharmacist, and according to the statement of his attorney, the only knowledge he has of medicine was obtained when he was employed as a servant in the house of a certain Dr. Hunt, now deceased. His father was a cook at the Vicksburg, Mississippi, hospital while the son was between 5 and 20 years of age. Paxton's first experience with medicine, according to his statement to the inspector, was a preparation concocted by him for the cure of mange on dogs. He claims that experience led him to develop his present preparations. His whole theory of the value of his preparations is that they develop 'good hot blood' which eliminates poison, and any disease, from the human body.

"Paxton has done some newspaper advertising but his present method of attracting business is by means of folders, circular matter and booklets. Much of the printed matter is quite obscene and filthy."

Paxton was engaged in correspondence by a Post Office Inspector using an assumed name, and, in the course of this correspondence, claimed that his nostrum would cure cancer, gonorrhea and many other specific diseases and ailments. In prescribing his nostrums for the cure of gonorrhea, Paxton warned against the use of it as a urethral injection and urged that it should be used as a rectal enema.

As a further part of Paxton's scheme in the sale of his preparations, he solicited fees for membership in what he called the American Cross Bearers. The membership fee was $2. Part of the advertising claptrap of the American Cross Bearers was a booklet in which Paxton set forth what he called rules and regulations governing its members and referring to a number of serious diseases and ailments, which he stated could be overcome by certain rules and practices to be followed by the members. In all instances, however, members were expected to keep themselves in health by means of the Paxton preparations. Quoting further from the Memorandum:

"The evidence before me shows that the American Cross Bearers is not an institution devoted to teaching members any 'priceless secret,' how to regain the 'vigor of youth' or how to 'avoid the knife for life,' but is simply a device or scheme designed by Paxton to further the sale of his preparations. Paxton is engaged in selling his so-called information and medicine to the less informed members of the negro race, to whom his appeals are more especially directed. The evidence shows that Paxton first started selling medicine through the mails in 1907 under the name Pax Tonic Blood Food Co., and continued until about 1921, when he discontinued the business, as he claims, by reason of an investigation made by the Department of Agriculture. Paxton is continuing the business described herein. The evidence shows, and I so find, that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises.

"A fraud order against the names, American Cross Chemical Company, Inc.; Pax American Cross Chemical Company, Inc.; American Cross Bearers; W. H. Paxton, President, and Mrs. Cassie Bell Paxton, Sec.-Treas., will suppress this scheme. I therefore recommend that a fraud order be issued against these names at Birmingham, Alabama."

Postmaster General Walter F. Brown followed the recommendation of the solicitor, and on July 19, 1929, issued a fraud order against the names given by the solicitor.

Correspondence

SEXUAL RESEARCH AND THE PENAL CODE

To the Editor:—In the Berlin letter (THE JOURNAL, June 22, p. 2119), I find a statement to the effect that the Catholic church "does not generally consider abortion during the first eighty days as a penal offense." This statement, if let pass, would, I have reason to believe, be quite misleading to Catholic physicians and the public generally, with rather serious effects.

Just what is meant by "penal offense" I do not know. The insinuation is, however, if I judge rightly, that the Catholic church does not consider the destruction of the human embryo within the first eighty days as real abortion or as sinful murder.

This may have been true, or at least a matter of dispute, before much was known of the process of generation and the fertilization and growth of the embryo. Now, however, it is universally held by Catholic theologians that the human soul is present from the moment the spermatozoon unites with the ovum, or the moment of fertilization; that this human soul directs the life and development of the embryo, and that the wilful destruction of this is taking the life of a human being.

B. H. SWINT, M.D., Charleston, W. Va.

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Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RÔLE OF THYMUS GLAND

To the Editor:—Frequent reference has been made in the literature recently to the rôle of the thymus gland as a cause of stridor in young infants. I am familiar with the work of Wasson and the statement of Abt that this is an infrequent factor. Kindly discuss the recent opinion. Please omit name.

M.D., Oklahoma.

ANSWER.—Opinion continues to be divided as to the rôle of the thymus gland as a cause of stridor in young infants. Cases of tracheal and laryngeal obstruction carefully studied by competent clinicians will show that stridor is frequently due to congenital cysts, papillomas of the larynx, defects in innervation of the laryngeal muscle, laryngismus stridulus of spasmophilic origin, inflammatory conditions within the larynx, and other similar conditions.

The question at issue is, "Does an enlarged thymus produce stridor?" What is the measure of thymic enlargement? As far back as 1829, Kopp established the conception of thymic asthma. He explained this stridor by the pressure of the large thymus on the laryngeal nerves. However, in 1858, Friedleben disproved this theory. He demonstrated by clinical and experimental studies that the thymus in the normal well child is large and does not exert any pressure on the underlying organs. His work was so convincing that for thirty years after there was no more question as to the pathologic effects produced by the thymus.

Wasson recently writes that the thymus is variable in size not only in different types of infants but in the same infant at different times. He also showed that the size of the thymus tends to vary directly with the weight of the child. As the infant increased in weight there was a corresponding increase in the size of the thymus until 1 year of age, and then as the infant gained less rapidly in weight the thymus gradually receded.

In studying the roentgenogram of the thymus one views a flat surface, which obviously does not represent the depth or the thickness of the gland. If the gland were to exert pressure on the underlying structures, it would do so by virtue of its increase in the anteroposterior direction. If the thymus produced stridor because of pressure on the trachea or larynx, one might also expect that it would produce pressure on the esophagus, the large vessels, the sympathetic ganglions, the recurrent laryngeal nerves or even the heart itself. From the most authoritative roentgenologic circles comes the statement that the flat shadow seen on the plate does not always represent the thymus gland but frequently the blood vessels of the mediastinum or branches of the pulmonary vessels. Clinicians and pathologists have worked on this problem for many years without coming to a unanimous opinion.

Finkelstein, in his textbook, takes a skeptical attitude toward the increasing thymus fad and states that cases which he previously called thymic asthma and which were described by the roentgenologist as thymic hyperplasia were always found to be due to another cause if carefully examined. In his belief the diagnosis is too frequently made without due consideration. True, there is a group of surgeons, obstetricians and even pediatricians who have every new-born infant and preoperative patient subjected to roentgen examination to ascertain the size and the condition of the thymus. In this way they believe they can forestall accidents incident to anesthesia and diminish operative hazards. This is frequently done regardless of the fact that the patient does not have any symptoms referable to the thymus.

There are no accepted standards as to the size of this gland. Feer, in a recent article, notes that the size of the thymus is in a large measure related to the state of nutrition. When a child becomes ill or is starved the thymus may shrink to one-twentieth its weight (accidental involution). The statistics of necropsies on sick patients do not afford an accurate conception of the size and weight of the normal thymus. Nevertheless if a practitioner is asked when the thymus is enlarged, he will reply that an increase in size is a matter of individual judgment and is not based on any definite or accepted standards, or that in many instances the organ is enlarged when the roentgenologist pronounces its fate and decrees that it shall be so considered.

The famous Langerhans case is frequently cited in the literature. It will be recalled that, early in the history of the antitoxin treatment for diphtheria, Langerhans's child died suddenly after a dose of antitoxin, administered during an attack of diphtheria. It was supposed that the death was due to enlarged thymus. At necropsy it was found that there was a teaspoonful of cooked cereal in the trachea. It is true that the thymus weighed 30 Gm., though there was no other evidence of lymphatic hyperplasia. There was some discussion whether the large thymus or the cereal in the trachea or the anaphylactic shock caused the sudden death. Obviously the tracheal obstruction induced by the cereal was a more likely determining factor of death than the enlarged thymus.

The function of the thymus is still a matter of speculation and its physiologic status has never been definitely determined up to the present time. It is true that at present, as in the past, sudden death among infants continues to occur. It is also acknowledged that stridor, asthma and a dyspneic type of breathing are observed. It must be admitted that in rare cases laryngeal stridor may be due to thymic enlargement. Feer described a solitary case in 1896 in which necropsy disclosed an actual tracheal compression by the enlarged thymus gland. This is the only case that Feer has seen in his wide experience. But to ascribe all these disorders to the thymus is unwarranted unless sufficient proof is adduced. It is illogical to assume that because there is stridor there must be thymic enlargement. The clinician is not justified in continuing his fallacious reasoning if the anatomist cannot definitely show a distinct causal relationship between thymic hyperplasia and stridor.

To draw conclusions from a shadow on a celluloid plate without mature clinical reflection and without morphologic basis may be termed "phantom diagnosis."

TREATMENT OF COMPLICATIONS OF DIABETES

To the Editor:—I have an elderly patient with mild myocarditis and mild diabetes mellitus. The heart is slowly improving and he is on insulin. His legs, however, continue swollen and red, and they itch intensely. What could I do to improve the latter condition? There is no albumin or casts in the urine. The blood pressure is normal. The urinary output is normal. External applications, of course, give only temporary relief. Please omit name.

M.D., Ohio.

ANSWER.—It is not stated whether the patient still has sugar in the urine, or what the blood sugar is. The primary consideration is not the mere giving of the insulin; it is necessary to control the diet and the insulin to such an extent as to make the patient's urine free from sugar and his blood sugar practically normal. The condition of the legs, as described, suggests that this has not been accomplished. Locally, sunlight and fresh air are about as efficient therapeutic agents as any.

USES AND EFFECTS OF KEROSENE INTERNALLY

To the Editor:—There seems to be considerable variance in opinion concerning the toxicity of coal oil when taken internally. By some it is considered toxic, while others claim to have administered it in teacupful doses. Please advise me what the maximum dose would be that could be safely administered by mouth in the treatment of intestinal parasitosis. Please omit name and address.

M.D., Indiana.

ANSWER.—The toxicity of coal oil varies in proportion to its more volatile products. As much as a liter has been swallowed without fatality but with gastro-enteritis and narcosis as a result. It has been given in doses of 2 cc. as a teniafuge, and larger doses might be used, but it can hardly be recommended for this use as there are less unpalatable and more efficacious remedies for this purpose.

TREATMENT OF OBESITY

To the Editor:—Please give me some advice as to this patient: A woman, aged 27, whose chief complaint is obesity, is 5 feet 5 inches (164 cm.) tall and weighs 230 pounds (104 Kg.) The fat is evenly distributed. She is big all over, the chest measuring 44 inches (112 cm.), and the waist 43 inches (109 cm.), and she has large pendulous breasts. There are no large deposits of fat. The patient is bright and alert. She has held an office position ten years. She plays the organ and piano well. There is nothing suggestive of hypothyroidism. Her appetite is average without any craving for certain foods. She put herself on a rigid diet and lost 30 pounds (14 Kg.), which made her feel weak. The patient feels best at her present weight. There is nothing remarkable in the past history. The family history shows that others were overweight, but not as much as this patient. Is it advisable to try to do anything for this girl? She is able to do her work but is embarrassed by her figure. Please omit name

M.D., Michigan.

ANSWER.—The patient certainly should reduce, although not to a marked degree. Instead of going on a rigid diet, she will probably do well in cutting out the extra sweets and such that she has probably been indulging in. Perhaps under medical care small doses of thyroid would be advisable.

CULTIVATION OF PATHOGENIC AMEBAS

To the Editor:—Kindly send to me the available data on the cultivation of the pathogenic ameba in vitro.

J. M. HOFFMAN, M.D., Pensacola, Fla.

ANSWER.—The first successful cultivation of *Endameba histolytica* was reported by Boeck and Drbohlav in 1924 on a medium that Boeck had previously devised for the cultivation of intestinal flagellates. The medium, which they called the "L. E. S. medium" (Locke's-egg-serum medium), consists of two parts: a solid part, which is prepared in the form of ordinary bacteriologic slopes, and a liquid part, which is then added so as to cover the solid part more or less completely. The solid constituent is made from four whole eggs (carefully cleaned with alcohol exteriorly) thoroughly emulsified in 50 cc. of Locke's solution (9 Gm. of sodium chloride, 0.2 Gm. of calcium chloride, anhydrous, 0.4 Gm. of potassium chloride, 0.2 Gm. of sodium bicarbonate and 2.5 Gm. of dextrose in 1 liter of distilled water); the mixture is then tubed, slanted and coagulated by heat (70 C.). The liquid constituent is made of inactivated serum (human or horse) diluted with Locke's solution (1:8). To the solid ingredient, after sterilization in the autoclave, is added the liquid, after sterilization by filtration. This medium with an initial p_H of from 7.2 to 7.8 does not need any further adjustment. It is then incubated to insure sterility. The viable and still warm amebas, which are introduced into the previously warmed medium by means of a sterile capillary pipet, sink to the bottom at the juncture of the solid and liquid with the glass and develop when the tubes are incubated at 37 C. under aerobic conditions. Throughout their active life the amebas live on the bacteria which are always present in the cultures. They grow most profusely on the second day, but they tend to die out on the fourth or fifth day unless transplanted to a similar subculture. With frequent transplantations, they can be propagated in the free ameboid form (they do not generally encyst) for an unlimited time. Sterile precautions and a constant temperature are essential.

Subsequently, many investigators have successfully cultivated *Endameba histolytica* on the same or on slightly modified mediums. Thus, Boeck and Drbohlav in 1925 recommended the use of dilute egg white (1 per cent crystallized egg albumin in Ringer's or Locke's solution, or the white of an egg per liter of liquid) in place of the serum (L. E. A., Locke-egg-albumin medium) and of ordinary blood agar in place of coagulated egg. The blood agar, however, possessed the disadvantage of being more tedious to prepare. Drbohlav (1925) advocated (1) N. N. N. blood agar covered with egg white diluted with Ringer's solution (6 Gm. of sodium chloride, 0.1 Gm. of potassium chloride, 0.1 Gm. of calcium chloride, anhydrous, and 0.1 Gm. of sodium bicarbonate in a liter of distilled water, buffered by 5 Gm. of potassium dihydrogen phosphate and adjusted to a p_H of 7.4) in the proportions of 1 egg per liter of Ringer's solution, and (2) a similar medium, except that the solid consisted of agar (1.4 per cent) plus 1 per cent of dissolved starch.

Dobell and Laidlow in 1926 became interested in obviating some of the difficulties which they encountered. They found that solid, dry rice starch, after being sterilized for one hour at 180 C. (dry heat) in small tubes of 2.5 Gm. capacity, when added to the cultures increased the growth of the amebas. Furthermore, they found that in cases in which starch-splitting bacteria were present, the addition of the yellow dye acriflavine hydrochloride, in a concentration of 1:20,000 for several subcultures, would generally kill off the troublesome bacteria, although it concomitantly often adversely modified the bacterial flora. In addition, they advocated the following modification: 1. The solid egg medium to be made up with Ringer's solution (9 Gm. of sodium chloride, 0.2 Gm. of potassium chloride and 0.2 Gm. of calcium chloride, anhydrous, in 1 liter of distilled water). 2. Inspissated horse serum, which appeared superior to the solid egg medium in growing many strains of amebas, to be prepared thus: Whole horse serum (sterilized by filtration) is tubed aseptically in suitable amounts and set in ordinary slants by heating in an inspissator at 80 C. from one hour to one hour and ten minutes. After cooling, the slants are incubated to test their sterility and are then covered with dilute serum or egg albumin (sterilized by filtration). The mixed medium is then again incubated to make sure that it is sterile and the sterilized starch is added immediately before the amebas are implanted. The p_H does not need adjusting. 3. A stronger egg albumin mixture to be made up by carefully mixing the whites of four eggs in a liter of sterile Ringer's fluid and sterilizing by filtration through a Seitz filter. This enabled wet films of the amebas to be fixed more easily for cytologic study. In a detailed study of the various combinations possible, these authors concluded that *E. histolytica* would grow abundantly for a week or more (without transplantation) on: (1) inspissated whole horse serum plus egg albumin diluted with Ringer's solution plus solid rice starch added to the liquid; (2) coagulated whole egg, emulsified in Ringer's solution (in place of Locke's solution, as Boech and Drbohlav advocated), plus the rice starch as described, or (3) coagulated whole egg, emulsified in Ringer's solution plus horse serum inactivated and diluted with Ringer's solution (1:8) plus the rice starch as described.

In this connection, it is interesting to note that Dobell and Laidlow were unsuccessful in cultivating *E. histolytica* on the medium of Barret and Smith (a 10 per cent solution of serum in 0.5 per cent sodium chloride) which they used in the first successful cultivation of an endameba, *E. barreti*, from the turtle (1924) and later (1926) *E. ranarum* from frogs.

In a later paper Dobell (1928) found that amebas would encyst if changed from a starch-free medium (Boeck and Drbohlav, 1925) to a medium supplemented with rice starch (Dobell and Laidlow, 1926) and vice versa, provided sterile precautions and a temperature maintained continuously at from 36.5 to 38 C. was meticulously observed.

USES OF POTASSIUM THIOCYANATE

To the Editor:—Please give me information as to the use and value of potassium sulphocyanide, its indications and contraindications.

F. H. COMSTOCK, M.D., Macomb, Ill.

ANSWER.—Potassium thiocyanate was introduced into therapeutics because it has a somewhat greater solvent influence on colloid aggregations than iodide. This suggested the use of the sodium or potassium thiocyanate in conditions in which iodides are of therapeutic value. It evidently has the expectorant effect of iodides for, like iodide, it is capable of causing coryza. It also resembles iodide in its tendency to produce acne. It has been credited with favoring the elimination of metals, possibly by increasing the solubility of the metal protein compounds. Regarding its recent use in hypertension the Council on Pharmacy and Chemistry reported (THE JOURNAL, June 1, 1929, p. 1838) that the evidence for its value is far from conclusive; that in many patients the production of lowered pressure does more harm than good; and that its use is contraindicated in acute inflammation of all types, in nephritis and in marked renal insufficiency. The chief difference between iodide and thiocyanate lies in the fact that the latter has no action on the thyroid gland. Hence it might be especially useful as a succedaneum to iodide when the iodide effect on the thyroid would be undesirable. The tendency to produce gastric disturbance, especially in cases of hyperacidity, limits its use and its dose, which should not exceed 1 Gm. daily.

MULTIPLE TROPHIC ULCERS

To the Editor:—I have under my care a man of about 35 whose past medical history is good. He has had at times for the past year small oval ulcers with a gray base and not much surrounding redness, which appear on the mucous membrane of his mouth and lips and on the scrotum and shaft of the penis, usually appearing in the two locations at the same time, though not always. I cannot find a cause for these lesions; the urine is acid; the Wassermann reaction is negative; on one occasion I found a small amount of sugar in the urine. I put him on a basic diet and gave alkalis internally; I have also given potassium chlorate internally, but these "cankers" still appear. The man usually drives them away by applying alum, but in about two weeks they again appear. If you can give me any reason for this condition or suggest treatment please do so, and kindly omit name.

M.D., California.

ANSWER.—This form of stomatitis is usually associated with some digestive disturbance, with dental restorations of a more or less extensive character that are not kept clean, or with some intoxication that involves the trophic nerves of the parts affected. The finding of sugar in the urine on one occasion is of some interest in the latter connection. The possibility of the existence of some focus of infection should not be overlooked. Nervous persons are more prone to this condition, and fresh crops of ulcers are likely to follow or be associated with exacerbations of the mental state. The chronic, recurring form in adults is often quite resistant to treatment.

As far as possible, general conditions of nutrition and metabolism should be improved, possible sources of intoxication and infection should be eliminated, and the ulcers should be treated locally with some astringent, as zinc chloride solution, silver nitrate or the alum that has been used by the patient. A soothing, cleansing, alkaline mouth wash should be used regularly and unusual attention paid to mouth hygiene.

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FOISONING FROM EATING FIREWORKS

To the Editor:—July 4, a child, aged 2, ate what is commonly called a "snake." This is a small firm cone about one-half inch in height, of gray plaster-like material, which, when ignited, exudes a sort of lava which congeals into a twisted rope. For one week the child has vomited everything ingested. The liver is not enlarged. The van den Bergh test is normal. There is no jaundice. The urine contains albumin. The blood urea is 78 mg. This is not the characteristic picture of phosphorus poisoning, and I am wondering what these "snakes" are made of. Please omit name.

M.D., New York.

ANSWER.—The dangers of phosphorus and mercury compounds in fireworks were discussed in Queries and Minor Notes, THE JOURNAL, Aug. 8, 1925, p. 458. As stated there, "snakes" or "Pharaoh's serpent's eggs" are at times composed of mercuric thiocyanate and gum. The same effect (great coils from the body of the lighted mass and serpentine movements) can be obtained from other substances not containing mercury. In the present case it is suggested that the treatment be that for mercury poisoning.

CAUSE OF DESQUAMATION OF HANDS

To the Editor:—A patient presented himself to me recently with a desquamation of small areas of skin over the fingers and palms of both hands. There were no other symptoms or observations. I consider this a case of keratolysis. Kindly tell me the etiology and treatment of this condition.

A. G. MARSHALL, M.D., Chicago.

ANSWER.—Desquamation of the hands may be a residual symptom of a simple dermatitis or of an epidermophyton infection. Keratolysis exfoliation has been described by Wende and others as a recurring desquamating condition analogous to a scarlatiniform erythema. The attacks are more frequent in summer. The etiology of the disorder is not clear. Treatment consists principally of keeping the affected areas well greased. Half strength Whitfield ointment might be used in cases in which an epidermophyton infection is suspected.

POSSIBLE DIAGNOSIS AND TREATMENT OF SYPHILIS

To the Editor:—I have a patient who has some reason to believe that he acquired syphilis three or four years ago. Although seven or eight physicians saw the lesion, it was not diagnosed until it declined to heal, when, after several injections of 0.4 Gm. of sulpharsphenamine, the symptoms gradually disappeared. He took proper treatment more or less regularly for about a year, after which his physician objected to giving him more arsphenamine, suggesting mercury. Since that time he has taken some irregular treatment and is now feeling bad. Assuming this to be syphilis, will you kindly advise me what is the proper treatment at this time. Is it possible at this stage of his disorder to effect a complete cure, or is the patient permanently disabled?

E. F. KINNE, M.D., San Fernando, Calif.

ANSWER.—It cannot be assumed, on the outline given, that the patient had a syphilitic infection. Before proceeding with any further specific treatment, one should try to decide definitely whether the patient has syphilis. If he has had it and the treatment has been as desultory as suggested, it is likely that the existence of the disease can be demonstrated.

TREATMENT OF GONORRHEAL SALPINGITIS AND PUERPERAL PERITONITIS

To the Editor:—What do you consider the best treatment of: (1) gonorrheal salpingitis with peritonitis; (2) puerperal peritonitis, nongonorrheal?

M.D., California.

ANSWER.—1. Gonorrheal infection of the upper genital tract is essentially a self-limited disease. Provided the patient avoids reinfection, the tendency is toward spontaneous recovery. Operation should rarely be resorted to for the purpose of eradication of infected tissues but should be reserved chiefly for relief from residual pathologic conditions and the sequelae of infection (painful adhesions, displacements with symptoms, functional bleeding and kindred disturbances). Medical care consists chiefly in supportive treatment—relief of pain, nourishing food, adequate sleep and proper elimination.

2. Operative treatment of nongonorrheal puerperal peritonitis is accompanied by high morbidity and high mortality. Expectant care is followed by recovery of most patients. The bacteria in these cases remain viable in the tissues for many months or even for years. Operative intervention, even when indicated, should be postponed if possible for at least six months and preferably for two years or longer. It should be especially emphasized that instrumentation of the infected uterus is always contraindicated except in rare instances in which there is hemorrhage sufficient to endanger life. Specific treatments, such as injections of sterile milk or other foreign proteins, antistreptococcic serums and vaccines, are of doubtful value. Supportive treatment is the chief essential in nonsurgical care.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Philadelphia, Oct. 21, 1929. Sec., Dr. William H. Wilder, American Board for Ophthalmic Examinations, 122 South Michigan Ave., Chicago, Ill.

CALIFORNIA: San Francisco, Sept. 11, 1929. Sec., Dr. Charles B. Pinkham, 420 State Bldg., Sacramento, Calif. (Written examination.)

CONNECTICUT: New Haven, Oct. 12, 1929. Executive clerk, Miss M. G. Reynolds, Box 1895 Yale Station, New Haven, Conn. (Basic Science; prerequisite to examination for license.)

HAWAII: October, 1929. Sec., Dr. James A. Morgan, Room 48, Young Building, Honolulu, Hawaii.

IDAHO: Boise, Oct. 1, 1929. Commissioner of Law Enforcement, Hon. F. E. Lukens, State House, Boise, Idaho.

MONTANA: Helena, Oct. 1, 1929. Sec., Dr. S. A. Cooney, Board of Medical Examiners, Power Building, Helena, Mont.

NATIONAL BOARD OF MEDICAL EXAMINERS: Examination to be held in all class A medical schools, Sept. 16-18, 1929. Executive Secretary, Everett S. Elwood, 225 South Fifteenth Street, Philadelphia, Pa.

NEW HAMPSHIRE: Concord, Sept. 12-13, 1929. Sec., Dr. Charles Duncan, Concord, N. H.

NEW MEXICO: Santa Fe, Oct. 14-15, 1929. Sec., Dr. W. T. Joyner, 20-21 First National Bank Bldg., Roswell, N. M.

OKLAHOMA: Oklahoma City, Sept. 10-11, 1929. Sec., Dr. J. M. Byrum, Shawnee, Okla.

Ohio June Examination

Dr. H. M. Platter, secretary, State Medical Board for Ohio, reports the oral, written and practical examination held at Columbus, July 3-6, 1929. The examination covered 10 subjects and included 80 questions. An average of 75 per cent was required to pass. Two hundred and forty-two candidates were examined, all of whom passed. Forty-nine candidates were licensed by reciprocity and four were licensed by endorsement of credentials. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
College of Medical Evangelists	(1929)	81.9
Yale University School of Medicine	(1928)	84.8
Loyola University School of Medicine	(1929)	76.5, 80.8
Northwestern University Medical School	(1929)	82
Rush Medical College	(1929)	83.6
Indiana University School of Medicine	(1929)	83.6
University of Kansas School of Medicine	(1928) 80.2 (1929)	80.4
University of Louisville School of Medicine	(1929)	83.2
University of Maryland School of Medicine and College of Physicians and Surgeons	(1929)	83.1, 85.7
Tufts College Medical School	(1928)	84
St. Louis University School of Medicine	(1928)	84.6
Washington University School of Medicine	(1926)	82.7
Creighton Univ. School of Med.	(1927) 85.5 (1928)	80.9, 86.2
Eclectic Medical College	(1929)	76, 76.3, 78.2, 78.7, 78.7, 80.4, 80.8, 80.9, 81, 81.1, 81.3, 81.3, 81.5, 81.5, 81.8, 82, 82.1, 82.2, 82.5, 82.7, 82.9, 83, 83.3, 83.9, 83.9, 84.3, 86.2
Ohio State University College of Medicine	(1929)	80, 80.7, 80.9, 81, 81.8, 82.5, 82.8, 83, 83.1, 83.4, 83.5, 83.7, 83.8, 83.9, 83.9, 84.1, 84.2, 84.3, 84.3, 84.6, 84.7, 84.8, 84.9, 85.1, 85.1, 85.4, 85.4, 85.5, 85.5, 85.6, 85.6, 85.8, 85.8, 85.8, 85.9, 85.9, 86.3, 86.3, 86.4, 86.5, 86.5, 86.6, 86.7, 86.7, 86.7, 86.8, 86.8, 86.9, 86.9, 86.9, 87, 87.3, 87.4, 87.5, 87.6, 87.6, 87.7, 87.7, 87.8, 88, 88.1, 88.2, 88.7, 88.8, 88.9, 89, 89.3, 89.6, 89.8, 90, 90.6
University of Cincinnati College of Medicine	(1928)* 89.4 (1929)*	75, 76, 77.9, 78.2, 79.2, 79.2, 79.5, 80.3, 80.4, 80.5, 80.9, 80.9, 81.3, 81.4, 81.5, 81.5, 81.7, 81.7, 81.7, 82, 82.1, 82.3, 82.4, 82.4, 82.5, 82.5, 82.6, 82.9, 83, 83.2, 83.2, 83.3, 83.3, 83.6, 83.8, 83.9, 83.9, 84, 84.1, 84.2, 84.2, 84.3, 84.3, 84.4, 84.5, 84.5, 84.7, 84.9, 85, 85.5, 85.7, 85.9, 86, 86, 86.6, 86.9, 87.4, 88.6, 89.4
Western Reserve University School of Medicine	(1929) 81.1, 81.7, 82.1, 82.3, 82.6, 82.7, 83.2, 83.3, 83.3, 83.6, 83.6, 83.7, 83.9, 83.9, 84.1, 84.1, 84.2, 84.3, 84.5, 84.6, 84.6, 84.6, 84.8, 84.9, 85.2, 85.3, 85.3, 85.4, 85.6, 86.1, 86.1, 86.2, 86.2, 86.2, 86.2, 86.3, 86.3, 86.4, 86.4, 86.8, 87.1, 87.3, 87.3, 87.3, 87.5, 87.6, 88.1, 88.3, 89.8, 91.6	
University of Oklahoma School of Medicine	(1928)	83.6
Jefferson Medical College of Philadelphia	(1929) 82.3,	84.8
Hahnemann Medical College and Hospital of Philadelphia, Homeopathic	(1929)	86.2, 86.2
Medico-Chirurgical College of Philadelphia	(1916)	86.9
University of Pennsylvania School of Medicine	(1928)	85.4
Meharry Medical College	(1929)	86.2
Marquette University School of Medicine	(1929)	77, 83.7
Dalhousie University Faculty of Medicine	(1927) 85.7,	86
McGill University Faculty of Medicine	(1923)	85.9
National University of Ireland Faculty of Medicine, Dublin	(1927)	78.8

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1922) (1928) (1929)	Illinois (1928) Alabama
Indiana University School of Medicine	(1918)	Indiana
State University of Iowa College of Medicine	(1927) (1928)	Iowa
Univ. of Louisville School of Med.	(1927) (2) (1928) (3)	Kentucky
Baltimore Medical College	(1900)	Penna.
Johns Hopkins Univ. School of Med.	(1921) (1925) (1928)	Maryland

Univ. of Mich. Med. Sch.	(1916) (1924) (1927) (3) (1928) (2)	Michigan
St. Louis University School of Medicine	(1928)	Missouri
Washington University School of Medicine	(1928)	Missouri
University of Nebraska College of Medicine	(1925)	Illinois
Columbia Univ. College of Physicians and Surgeons	(1921)	New York
University of Buffalo School of Medicine	(1903)	New York
Eclectic Medical College, Cincinnati	(1885) (1918)	Kentucky
University of Cincinnati College of Medicine	(1928)	N. Carolina
Jefferson Med. Coll. of Phila.	(1903) Pennsylvania, (1927)	California
Temple University School of Medicine	(1911) (1927)	Penna.
University of Pittsburgh School of Medicine	(1910)	Penna.
College of Physicians and Surgeons, Memphis	(1907)	Mississippi
Meharry Medical College	(1927)	Tennessee
University of Tennessee College of Medicine	(1928)	Tennessee
Vanderbilt University School of Medicine	(1926)	Tennessee
University of Texas School of Medicine	(1926)	Texas
Medical College of Virginia	(1928) Virginia (1928)	W. Virginia
University of Toronto Faculty of Medicine	(1926)	Michigan
McGill University Faculty of Medicine	(1926)	Michigan
University of Debrecen, Hungary	(1922)	New York
University of Vladimira	(1919)	W. Virginia

ENDORSEMENT OF CREDENTIALS

College	Year Grad.	Endorsement with
Rush Medical College	(1928)	N. B. M. Ex
Harvard University Medical School	(1917)	N. B. M. Ex.
Washington University School of Medicine	(1925)	N. B. M. Ex.
University of Pennsylvania School of Medicine	(1921)	N. B. M.Ex.

* These candidates have received their M.B. degrees and will receive their M.D. degrees on completion of one year's internship in a hospital.

Book Notices

ERGEBNISSE DER LIPOIDSTOFFWECHSELFORSCHUNG MIT BESONDERER BERÜCKSICHTIGUNG DER VERHÄLTNISSSE IM KINDESALTER. Von Dr. Hans Knauer, Assistenzarzt an der Universitätskinderklinik zu Breslau. Paper. Price, 7 marks. Pp. 164, with 23 illustrations. Berlin: S. Karger, 1928.

The author of this monograph on lipoid metabolism states that it has been his purpose to gather the various scattered references in the literature and in part to add his own observations and results. The lipoids are an indispensable constituent of every cell and are of the greatest importance in various physiologic functions. A disturbance of their proper correlation may be associated with severe ailments. The author presents Bang's classification of lipoids: fats, cholesterols, phosphatides and cerebrosides. The biologic properties of lipoids are described and their ability to combine with the most varied substances. In fact, Glikin calls them "the cement of the body structure." The rôle of the lipoids is explained in such varied processes as sedimentation of the erythrocytes, hemolysis, blood coagulation and the immunity reactions. In this connection it is interesting to note that lecithin tends to increase hemolysis and cholesterol to diminish it. The writer observes also that the importance of the lipoids in immunity has been demonstrated clinically and experimentally. Thus, Stepp has demonstrated that animals fed on lipoid-free material showed exceptionally poor resistance to disease, and, on the contrary, animals previously fed with diet rich in cholesterol showed an increased resistance to infection. The lipoid content of the various foodstuffs is shown by means of tables. The way in which the type of nutriment taken affects the lipoids in the blood is explained. Thus Junkersdorf reports a definite lipemia in hunger and cachexia; de Langen ascribes the low cholesterol content of the blood of inhabitants of the Dutch Indies to the cholesterol-poor nourishment. It has also been demonstrated that in feeding a liberal fat diet there is a lipoid increase in the blood. Knauer notes that the various organs have different lipases, and the lipolytic properties are more pronounced in the glands of the sympathetic system (suprarenals and hypophysis) than in the vagotonic system. Edelman has demonstrated that in all pathologic states of lipemia (diabetes mellitus) there is a decrease in the blood lipase. On the other hand, Bloch found in nephrosis an increase in the lipase of the blood serum. In the pregnant organism there is a gradually increasing hyperlipemia, which after delivery returns rapidly to normal values. The significance of the lipoids in the growing organism is also indicated by its occurrence in considerable quantities in eggs; the author asserts that hen's eggs contain more lipoid than any other food material (1 per cent cholesterol). The distribution of lipoids in the various organs is considered and some interesting facts are presented in this connection. Thus, the suprarenals are considered to be a storage depot for cholesterol and are richer in cholesterol than any other organ of the body. According to Chauffard, Guy Laroche and Grigant, 5 per cent of the fresh suprarenal gland is cholesterol. Next to the suprarenals, the brain is stated to have the highest cholesterol content. According to Fränkel, two thirds of the brain is lipoid and one third albuminous in structure. Under pathologic conditions there may be a marked increase in the lipoid content of the liver. Other organs of the reticulo-endothelial system show a similar tendency. The spleen is said to play an important part in the metabolism of cholesterol. The author shows the range of normal values for blood lipoids and presents a series of tables which give the lipoid values (cholesterol, phosphatides and fatty acids) in various clinical conditions, such as pregnancy, blood dyscrasias, icterus, thyroid conditions, nephritis and nephrosis, cerebral and cardiac conditions, syphilis, sepsis, tuberculosis and obesity. There is an extensive bibliography. Knauer has presented the various aspects of lipoid metabolism and their clinical significance in an interesting and practical fashion which should be of use to practitioners and pediatricians who have reference to this subject.

TUBERCULOUS INTOXICATIONS: CONCEALED AND MASKED TUBERCULOSIS. A Clinical Study. By Joseph Hollós, M.D., Pathologist of St. Vincent's Hospital, Staten Island, New York. Cloth. Price, $3.25. Pp. 132. New York: William Wood & Company, 1928.

This is an enlarged edition of an earlier publication, which appeared in Budapest in 1909. The author holds that many diseases now thought to be separate entities are, in reality, manifestations of concealed tuberculosis. Among these diseases are anemia, neurasthenia, thyrosis, hysteria, epilepsy, rheumatism, neuralgia, rachitis tarda and dysmenorrhea. It may be remembered that this idea, as far as concerns rheumatism and arthritis, was brought before the medical profession in France by Poncet and Leriche, whose book "Le rheumatisme tuberculeux" appeared in 1909. Poncet held, as does the present author, that arthritis is a manifestation of tuberculosis instead of tuberculosis being a complication of arthritis. Dr. Hollós presents sixty cases of the diseases mentioned in support of his contentions. The remedy for these intoxications, the author believes and recommends, is Spengler's immune blood. The author remarks in his preface that he has met with much disbelief and lack of understanding in the presentation of his views of tuberculous intoxications. It will be called to mind that Antonin Poncet also was an unhonored prophet in his own country. The present volume may serve to call attention to this subject, which merits investigation, at the least. It would appear that a paper possessing apparent earnestness and honesty, as this does, should be supported or refuted as the result of independent study.

DIE BEHANDLUNG DER ZUCKERKRANKHEIT MIT FETTARMER KOST. Von Prof. Dr. O. Porges, und Dr. D. Adlersberg. Paper. Price, 24 marks. Pp. 377, with 40 illustrations. Berlin: Urban & Schwarzenberg, 1929.

The authors have departed radically from the traditional low carbohydrate diet in diabetes mellitus. The first seventy pages is devoted to the effect of carbohydrates, proteins and fats on the blood sugar, pancreas and liver. Theoretically a liver filled with glycogen causes a steady increase in tolerance to carbohydrates. It is also asserted that a pancreas which works at full capacity trying to assimilate large amounts of carbohydrates will gradually regenerate its ability to produce insulin. In contrast, a pancreas that is spared suffers a loss of power to produce insulin. It is asserted that protein has a beneficial action to the extent of 80 Gm. or more daily. Blotner and Murphy of Harvard have recently emphasized the importance of a high protein diet, particularly one high in liver, to increase carbohydrate tolerance. A dietary regimen depending on whether the patient has severe or mild diabetes and whether he is obese or undernourished is presented. Insulin is advocated if necessary. Carbohydrate from 100 to 300 Gm., protein 80 Gm. and fat only about 50 Gm. daily are advocated. Glycosuria is recommended in the early part of the treatment. A careful and complete series of protocols comprising fully half of the volume substantiates the authors' conclusions. An appendix contains a manual of foods, with methods of preparation. The bibliography recommends itself for its thoroughness and for its familiarity with the leading authorities on the subject, not only European but also American.

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THE NEUROSES. By Israel S. Wechsler, M.D., Associate Professor of Clinical Neurology, Columbia University. Cloth. Price, $4 net. Pp. 330. Philadelphia: W. B. Saunders Company, 1929.

Among the neurologists of America, it can be safely said that those who hold to the orthodox freudian position are in the minority. The large remainder adopt more or less individual points of view with modifications of psychoanalytic theory. As a result, the rest of the medical profession and many of the laity are puzzled by conflicting neurologic opinion. It must be admitted by any one who examines the subject that the freudian teachings have gradually evolved a view of the neuroses which, when once certain axioms are granted, provides a more complete and consistent explanation of these disorders than does any other school. Dr. Wechsler is no extremist. He carefully outlines such opposing views as the physiologic, behavioristic, endocrinologic, suggestionist and social-biologic, and gives brief accounts of the ideas held by Jung and by Adler. He has, however, seen fit to present a clear-cut survey of the neuroses from the freudian point of view. Speaking of various theoretical matters, he says: "A number of the concepts are admittedly subject to dispute. Many no doubt will be revised, modified, amplified, substituted or altogether discarded. But there are several which cannot be dispensed with at present if one would speak the language of psychopathology, and there are a limited few which are absolutely fundamental to the theory of psychoanalysis. Among the latter must be included the following: (1) the theory of a dynamic unconscious; (2) the theory of unconscious conflict; (3) the theory of repression; (4) the theory of transference; (5) the concept of infantile sexuality." The present volume is an expansion of the brief chapter on the neuroses contained in Dr. Wechsler's successful "Text-Book of Clinical Neurology." It opens with an interesting history of psychiatry and an account of the development of psychopathology. There follow chapters on mental mechanisms, etiology, classification, clinical manifestations, diagnosis, course, prognosis and treatment. More than thirty case histories add greatly to the interest and clearness of the text. Especially valuable is the discussion of differential diagnosis of the neuroses from psychiatric, organic-neurologic, and other medical conditions. An appendix contains practical advice on history taking and examination, and a section on intelligence tests by David Wechsler, Ph.D. The book presents in a compact form a large fund of information not otherwise easily accessible. It will be especially helpful to medical students and neurologists and should interest any general practitioner.

DIE PRAKTISCHE DURCHFÜHRUNG DER ERNÄHRUNG DES ZUCKERKRANKEN MIT FETTARMEN KOSTFORMEN NEBST ANWEISUNGEN FÜR DIE DIÄTKÜCHE. Von Prof. Dr. O. Porges, und Dr. D. Adlersberg. Paper. Price, 1 mark. Pp. 24. Berlin: Urban & Schwarzenberg, 1929.

Here is a short manual for the treatment of diabetes mellitus by a low fat diet. The volume is clearly written. It is designed for physicians and dietitians. A number of representative diets and the preparation of the foods in these diets are given. It should prove valuable in carrying out this type of regimen.

PROGRESSIVE RELAXATION: A Physiological and Clinical Investigation of Muscular States and Their Significance in Psychology and Medical Practice. By Edmund Jacobson, A.M., Ph.D., M.D., the Physiological Laboratory, the University of Chicago. Cloth. Price, $5. Pp. 429, with 69 illustrations. Chicago: University of Chicago Press, 1929.

This is a summary of many years' work and thought by the author concerning functional disturbances of the neuromuscular system which play so large a part in the symptomatology of the neuroses. The book is largely concerned with neuromuscular hypertension, a term used to describe the muscular tenseness and hyperactive state of the so-called functional case. The author has amassed a wealth of facts from the literature on the subject of muscle tone, its mechanism of production and its disturbances. With an adequate index and complete bibliography, this alone makes the work invaluable. His own work is original, consisting of many careful experimental observations, but clinical studies on normal and abnormal individuals have also been carried out. A method of inducing partial and complete relaxation has been perfected for practical use. Many interesting case studies on various types of abnormal tenseness, including the spastic colon and the esophageal globus, are reported. It is well worth while for physicians of any specialty and certainly internists and neurologists to become familiar with the views and technic described, as the problem of neuromuscular hypertension has heretofore been usually treated unsuccessfully.

PHYSIOLOGIE GYNÉCOLOGIQUE ET MÉDECINE DES FEMMES. Par Henri Vignes, accoucheur des Hôpitaux de Paris. Paper. Price, 65 francs. Pp. 561, with illustrations. Paris: Masson & Cie, 1929.

This is a companion volume to "Physiologie obstétrical normale et pathologique" by the same author, which appeared in 1923. In the obstetric volume, Vignes considered only reproduction, the principal function of the genital organs. In the volume on gynecology, he analyzes how the genital apparatus functions outside of gestation and how this activity affects the entire organism. The same thoroughness with which the first book was written is manifest in the present volume, and even a cursory perusal shows how extensively Vignes has read the literature in the preparation of this book. It is not an exaggeration to say that all the important articles which deal with the physiology of women and have appeared during the last quarter of a century in French, German, American and other journals are mentioned in the text. The book is divided into eight parts and is encyclopedic in nature. It will prove indispensable to gynecologists, especially to those interested in the literature.

SQUINT: ITS CAUSES, PATHOLOGY, AND TREATMENT. By Claud Worth, F.R.C.S., Consulting Surgeon to the Royal London Ophthalmic Hospital (Moorfield's). Sixth edition. Cloth. Price, $3.50 net. Pp. 246, with illustrations. Philadelphia: P. Blakiston's Son & Company, 1929.

One of the points of difference between an ophthalmologist and an optometrist is that the former is supposed to be able to handle a case of squint in such a manner that by hook (glasses and training) or by crook (operation) the eyes become parallel. This cannot be done intelligently unless one has read Worth on Squint or else has had an experience covering hundreds, even thousands, of cases of squint, followed from infancy on. It is on such an experience that Worth has based his book, which contains more personal observations and less bibliographic theorizing than any of the modern texts. The matter is presented in such an intimate way that there exists a feeling of personal contact with the author. The first edition appeared in 1903 and there have been no fundamental changes in the subsequent editions, although the subject matter has been amplified and refinements in technic have been added. The basic idea of early correction of optical defects with extensive and persistent training of the fusion sense is emphasized throughout the book and carries a lesson that the majority of ophthalmologists can study to great advantage. Orthoptic training deserves greater attention than it is usually accorded in this country. Every ophthalmologist should have Worth on Squint at his fingertips, regardless of whether or not he agrees with all details.

DISEASES OF THE LARYNX INCLUDING THOSE OF THE TRACHEA, LARGE BRONCHI, AND ŒSOPHAGUS. By Harold Barwell, M.B., F.R.C.S., President of the Section of Laryngology, Royal Society of Medicine. Third edition. Cloth. Price, $3.65. Pp. 278, with 112 illustrations. New York: Oxford University Press, 1928.

This emphasizes the same purpose that the author outlined in his original edition, namely, "to provide a small practical manual for the use especially of the general physician and of the student." The author takes up the various subjects, such as surgical anatomy, examination of the larynx, congenital diseases, inflammation, syphilis, tuberculosis, tumors and neuroses. Diseases of the larynx and of the esophagus as well as the various operations are described, and an appendix in which formulas of various medication are given is added. In this edition the author has introduced many recent subjects which have been developed since the former editions. His style is clear, the illustrations are good, and the practical side of the subject is never lost. He also gives some valuable hints and offers many suggestions gleaned from his own experience. The book fulfils the purpose for which it was intended and should prove of great value, not only to general practitioners, but to laryngologists as well.

DIAGNOSTIC METHODS AND INTERPRETATIONS IN INTERNAL MEDICINE. By Samuel A. Lowenberg, M.D., F.A.C.P., Assistant Professor of Clinical Medicine, Jefferson Medical College. Cloth. Price, $10 net. Pp. 1032, with 547 illustrations. Philadelphia: F. A. Davis Company, 1929.

The author has undertaken the stupendous task of covering the fields of history taking and physical examination of the entire body, with a description of all that may be encountered in the various portions of the body. Endocrinology and diseases of the nervous system are included. In addition there are sections on laboratory diagnosis, including electrocardiography, roentgenologic diagnosis, and remarks on life insurance examination, industrial examination, and periodic health examination. The author has succeeded far better than one would expect in the fulfilment of this impossible assignment. The foremost problem in this work is not what to say but what to omit. Whether or not the author's choice of omissions has been a wise one must, of course, be a matter of opinion. With the exception of the discussion of the technic of history taking and examination, the subjects are much too briefly considered. To the student of medicine, both undergraduate and practicing, the book will serve as a reminder of the many things that are overlooked in the ordinary physical examination. It may be occasionally used as a reference book to offer an explanation for some unusual finding. Because of the brief space allotted to each subject, the lack of an adequate bibliography is noticeable.

MEDICAL AND ALLIED TOPICS IN LATIN POETRY. By Heinrich Oppenheimer, D.Lit., LL.D., Ph.D., of the Middle Temple, Barrister-at-Law. Cloth. Price, 30s. net. Pp. 445. London: John Bale, Sons & Danielsson, Ltd., 1928.

The Latin physicians were sometimes given to verse and the Latin poets were all given to medicine. Thus the author has a rich field from which to select the examples that form the basis of the various chapters of his exceedingly unusual volume. The English translations of the verse cited are taken in many instances from English masters of versification. Here, then, are collected poems concerning all the portions of the human body and all the diseases that afflict them. Here are poems about the mind and the soul and love and life and death. The book is a marvelous source book for the student and an extremely interesting volume for the physician who revels in the classics, both medical and lay.

STUDIES IN NUTRITION: An Investigation of the Influence of Saltpeter on the Nutrition and Health of Man with Reference to Its Occurrence in Cured Meats. By Harry S. Grindley, and Ward J. Mac Neal. Volume II: Discussion and Interpretation of the Data Relating to the Health and Physical Condition of the Men. By Ward J. Mac Neal, with the assistance of Josephine E. Kerr, and William S. Chapin. Cloth. Price, $5 net. Pp. 406, with 66 illustrations. Urbana: University of Illinois Press, 1929.

In this investigation, attention has been devoted principally to the effects of potassium nitrate on the functions of the stomach by examination of the gastric juice and the rate of motility and absorption; the qualitative examination of the feces and urine; the bacterial examination of the feces, and studies of the blood and blood pressure and the action of potassium nitrate on bacteria and enzymes. The authors are exceedingly cautious in drawing conclusions in this controversial field and are plainly aware that their position is open to attack and refutation. Nevertheless definite effects of potassium nitrate on certain functions are indicated.

THE STORY OF MODERN PREVENTIVE MEDICINE: Being a Continuation of the Evolution of Preventive Medicine, 1927. By Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P. Cloth. Price, $4. Pp. 295, with 10 illustrations. Baltimore: Williams & Wilkins Company, 1929.

This convenient volume is a continuation of the author's previous book on the evolution of preventive medicine. Professor Newsholme writes succinctly and directly of the prevention of specific diseases, including all the common infectious disorders, of physical and social conditions associated with health such as air and ventilation, fog, smoke and sunlight, housing and occupation, and of physiologic conditions of health. In the last named section he considers goiter, deficiency diseases, rickets, scurvy and alcoholism. Obviously it is not possible in a small book of this type to cover the literature fully or to treat various debatable subjects pro and con. The high lights are brought out sharply and the general reader will be able, by careful reading, to orient himself accurately.

DIE DEUTSCHEN UND IHRE NACHBARVÖLKER: Neue Grundlegung der Anthropolgie, Rassen-, Völker-, Stammeskunde und Konstitutionslehre nebst Ausführungen zur deutschen Rassenhygiene. Von Prof. Dr. Walther Kruse, Direktor des Hygienischen Instituts der Universität Leipzig. Paper. Price, 41 marks. Pp. 640, with 22 illustrations. Leipzig: Georg Thieme, 1929.

Professor Kruse has prepared an anthropologic and ethnologic study of the people of Germany and of the surrounding countries. The work is not at all technical and may be read by any one with a fair reading knowledge of German. Unfortunately, it has not the objectivity that should characterize a scientific work, and in its later chapters particularly shows a type of chauvinism that well-nigh ruins its value as a scientific contribution.

THE CYTOARCHITECTONICS OF THE HUMAN CEREBRAL CORTEX. By Constantin von Economo, Professor of Neurology and Psychiatry, University of Vienna. Translated by Dr. S. Parker. Cloth. Price, $6.25. Pp. 186, with 61 illustrations. New York: Oxford University Press, 1929.

Here in compact form is a description of the cellular architecture of the human cortex, given in much greater detail in the monumental atlas with German text by Economo and Koskinas, published in 1925. The illustrations, mostly reproductions of photographs of all important cortical areas, add greatly to the value of the book. This line of investigation, together with the analogous study of the medullated fibers of the cortex —myelo-architectonics—has thrown important light on cortical functioning in health and in disease. In summarizing, Economo states, however, that apart from amyotrophic lateral sclerosis there is no general areal limitation of pathologic processes but that there is rather a regional selection of certain structural types of the cortex. There is, furthermore, a certain laminal affinity to disease, as a result of which the third layer is markedly affected in psychotic disturbances of the personality; while the diseases which primarily affect the capacity for expression and motility show a particular affinity for the fifth and sixth (efferent) layers.

MEDICO-LEGAL PROBLEMS. By Lord Riddell. Cloth. Price, 5/- net. Pp. 100. London: H. K. Lewis & Company, Ltd., 1929.

In this book the distinguished English jurist has assembled essays on the legal responsibility of the surgeon, the ethical, legal and medical aspects of abortion, the law and ethics of medical confidences, and the sterilization of the unfit. The author writes in beautiful prose with a sense of humor, and his work is distinctly thought provoking since it emphasizes the new legal problems that have arisen through the advances of medical science and through changing social relationships. He asks, for instance, "What are the rights of a wife whose husband submits to a monkey gland operation and takes to climbing the family chandelier?" He considers "Is the surgeon justified in removing what may be described as a normal middle-aged double chin?" and he answers most of his questions with the Ciceronian maxim, "Let the good of the people be the paramount law."

WHO'S WHO AMONG THE MICROBES. By William H. Park, M.D., and Anna W. Williams, M.D. Cloth. Price, $3. Pp. 302, with illustrations. New York: Century Company, 1929.

The average layman who is not familiar with a microscope and with its use in making a study of microscopic forms of life has little if any conception of the nature of germs and of the manner in which they cause disease. It seems doubtful whether he can be given such a conception without actual laboratory study. Nevertheless Drs. Park and Williams have endeavored to reveal this hidden world to those who care to read. If their imaginations are capable of projecting the pictures that the authors convey, they will have something more of an insight than can be obtained from the usual book. The authors know whereof they write because their experience has included almost every phase of investigation and clinical study. They find it impossible to discuss the subject without a highly technical nomenclature. Yet it is inconceivable that the subject should be presented without an accompanying deluge of definitions. The book will be especially interesting to the young college student who has had at least a smattering of biology and zoology and hygiene and who wishes to know something more of the field of bacteriology without embarking on extended courses in the subject.

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Miscellany

A PERSONAL EXPERIENCE WITH OPIUM ADDICTION

[NOTE.—The following manuscript is a record of the experience of a physician who took from 1 to 2 grains (0.065 to 0.13 Gm.) of morphine daily for four years, and who then voluntarily discontinued the drug without ill effects. The document is unusual not only for its scientific value but also as an introspective statement of experience.—EDITOR.]

In May, 1924, I was well except for gastric distress, diagnosed as hyperacidity, for which I had been taking sodium bicarbonate, magnesia, bismuth and belladonna for years. In the fall of 1924 I began to have sharp pains with great oppression directly over the heart, associated with pains in the palms of both hands, and, singularly, this pain came on with great regularity, hourly, on the hour, during waking hours. It was relieved promptly by glyceryl trinitrate. Later these attacks became sharper and larger doses were required.

I was in my office, Dec. 6, 1924, when I was attacked with sharp pain directly over the heart and in the palms of both hands, accompanied by great dyspnea and cough, not relieved by glyceryl trinitrate. As the dyspnea and pain increased, I drove home at 2 p. m. At 3 my physician arrived and said I had an attack of cardiac asthma. This was accompanied by cough and frothy, bloody mucus. He gave me morphine hypodermically, and in an hour a second injection. Following this I remained in bed for ten days, without fever. There was no return of the asthma. After ten days I was permitted to sit up. Both legs were swollen with edema to the knee. This subsided and ten days later I was able to attend to my work.

There were each day frequent attacks of cardiac pain. Morphine was prescribed as circumstances required during the attacks of pain while I was at home. As the glyceryl trinitrate did not afford relief after that, morphine was to be taken as required. With two or three daily hypodermic injections I went for six months when, in July, 1925, because of prostatic conditions, there was retention of urine requiring catheterization and the catheter was left in situ for three days; then it was removed. There has been no trouble with the prostate since then. The pains continued; they were not so regular as before, but they were persistent, grinding and associated with a sense of impending danger. Morphine always relieved the symptoms.

From July, in fact from the previous December, 1924, until December, 1928, I took morphine in one-fourth grain (16 mg.) doses at first three times daily, the attacks coming more often or the morphine losing its effect. I at last took seven or eight hypodermic injections daily.

The only effect of the morphine was to relieve pain. It did not induce sleep. Barbital produced sleep and the nights were as a rule free from pain. In October, 1925, I gave up my office, and was kept fairly comfortable with the morphine and barbital.

There never was a condition of joyous excitement or beautiful visions of remarkable content. It was a state of laissez faire, with an intense desire to be mentally active especially when the larger doses were taken. There was the added worry on account of my own and family illness and the lack of earning power.

Because of this and also because of the drug, I was mentally stimulated to a great degree. I wrote many letters and was full of plans to be helpful, as I thought, to others, notably to my friends in the profession. In those letters, of most of which I have kept copies, there is a lack of judgment that I am sure I would not have shown in normal circumstances. I was for doing great things, without any recompense, which would naturally be an expense to myself. I was sure that I could recoup myself with literary work. I feel now that the well known effect of the morphine not only lessened my capacity for sound judgment but stimulated my estimate of my mental capacity. Fortunately, much of what I wrote was censored at home and not sent, and my attention was frequently called to my overactivity.

In December, 1928, after four years of the use of morphine, I felt myself increasingly irritable, probably because the euphoria of the drug was wearing away. I realized that my judgment was warped. I had a feeling of helplessness and had placed myself in a position to be ridiculed. I sent for my physician and told him plainly how I felt. He assured me that it was all due to the morphine and that I had it in my own hands to stop the opiate. When I asked about the pains that I still had he said that true angina pectoris could not last all those years and that other remedies would be found. He assured me that I could safely stop the morphine but doubted whether I would do so. If the pains became severe I could take a single hypodermic. During all this time I smoked tobacco in the form of cigarets. I stopped the latter at my own volition and also the morphine and have not used either since, now a period of seven months.

Regarding the withdrawal symptoms: There were times when the oppression was most agonizing. I sat in my chair with the only comforter I knew, the electric heater pad, took no drugs except the barbital at night, 5 grains (0.3 Gm.) and gradually the oppression wore away, helped at times by a preparation of the suprarenal residue. About once a fortnight, I found the still persistent oppression about the heart unbearable and one-fourth grain (16 mg.) of codeine by mouth gave some comfort. In other words, in my own case there were no withdrawal symptoms that one with reasonable determination could not successfully fight. It was more than a month before I could calmly judge what had happened, and fully two months more before I felt myself normal. During all this time of drug addiction I was active in the interest of my profession, had a large correspondence with many colleagues, and wrote original articles which were acceptable to the editors. While I do not feel that one case makes a rule, I feel that an honest and determined effort can break up any habit.

Medicolegal

Reading Medical Literature to a Witness

(Ruud v. Hendrickson (Minn.), 222 N. W. 904)

Ruud injured his left arm and elbow, a Volkmann's contracture developed, and he sued the attending physician, Hendrickson, for malpractice, in the district court, Hennepin County. A medical witness called by the plaintiff stated that in his opinion the contracture was caused by placing a bandage about the arm so tightly that it obstructed the flow of blood to the muscles and that such treatment was not in accordance with the usual practice of the ordinarily careful and skilled members of the profession in the community. On cross-examination, the witness admitted that he "recognized *Annals of Surgery* as a part of the medical literature." The defendant then, over plaintiff's objection, read excerpts from an article in that publication, to the effect that in the case of a fracture in the region of the elbow joint the conditions resulting from the injury may have the same effect as a tight bandage, and that no one factor is responsible for the production of a Volkmann's contracture; and the defendant asked the witness whether that was not good medical and surgical doctrine. The defendant read similar excerpts from other recognized authorities and asked similar questions. The witness agreed that the passages read correctly stated the doctrine and practice of the profession. Judgment was rendered in favor of the defendant, and the plaintiff's motion for a new trial was denied. Thereupon the plaintiff appealed to the supreme court of Minnesota, contending that the trial court erred in permitting the defendant's counsel to read extracts from medical works in framing questions for the cross-examination of the plaintiff's witness.

The supreme court conceded that medical works are not admissible as substantive evidence, because the authors are not under oath nor subject to cross-examination. It pointed out, however, that "where a physician testifying as an expert bases his opinion, in whole or in part, on such works, he may be questioned on cross-examination as to views differing from his

in books which he recognizes as an authority, although it may incidentally place the views of the authors before the jury." Although there are decisions of courts of high standing to the contrary, said the court, "the weight of authority is to the effect that where a witness testifies as a medical expert, excerpts from books and publications recognized as authorities by his profession may be read in framing questions on cross-examination asked for the purpose of testing his knowledge and competency, the accuracy of his conclusions and the weight to be given to his opinions."

The judgment in favor of the defendant was affirmed.

Reliance on Count of Sponge Nurse No Defense

(Ault v. Hall (Ohio), 164 N. E. 518)

The defendant, Dr. Hall, removed the plaintiff's gallbladder. Eight weeks later, the incision having failed to heal, a sponge was discovered in the operation wound. The plaintiff sued in the court of common pleas, Cuyahoga County, and from an adverse decision, sustained by the court of appeals, she brought error to the supreme court.

Dr. Hall contended that it is a custom and practice generally among surgeons, where an abdominal or major operation is to be performed, to have present a house surgeon, a first assistant surgeon, an anesthetist, a table nurse, a sponge nurse, and an instrument nurse; that this custom and practice prevail generally in the locality of Cleveland, and that all such employees were present in the operating room and assisted in the operation he performed on the plaintiff. He further contended that it is the duty of the sponge nurse correctly to count the number of operative sponges used, that it is the custom of surgeons in hospitals generally, in Cleveland, to rely on the sponge count reported by the sponge nurse, and that he did so rely. Neither the anesthetist, the assistant surgeon, nor any of the nurses were employed or selected by him.

The plaintiff claimed that the trial court erred in imposing too great a burden on her in establishing her case, when it charged the jury, at the behest of Dr. Hall: "The court says to you as a matter of law that the presumption is in favor of the defendant in this case, namely, that Dr. Hall, at the time complained of, was in the exercise of ordinary care in the premises." This instruction, the court said, was not an accurate statement. It would have been more accurate to instruct the jury that no presumption of negligence is indulged from the mere fact of injury, but that the burden of proof is on the plaintiff to show by the preponderance of evidence that she was injured by the negligence of the defendant and that such negligence occasioned her damage. The plaintiff further complained of the following instruction given by the trial court:

> On the other hand, I say to you as a matter of law that in the event that you should find from all the facts that this defendant used and adopted the usual, ordinary and accepted method in the performance of this operation, and that the evidence convinces you that here in this vicinity he had a right to rely upon the sponge nurse as to the count and the number of gauze sponges that were used and extracted, and taken out of that wound when it was closed up, then I say to you that in that event he could not be found liable in this case, if that is the usual, ordinary and accepted rule among surgeons in this vicinity, and your verdict should be for the defendant.

It is plain, the court said, that the jury could have gotten no other idea than that it was customary to rely on the count of the sponge nurse, and that if a sponge nurse was employed and all sponges were accounted for by her, the surgeon was relieved of all responsibility for sponges so used. No one, the court continued, questions the wisdom of a system of committing to a nurse the duty of preparing in advance a supply of sponges, carefully counted, and the duty of continuing to have the custody of them. That this system is usually employed generally by physicians and surgeons in abdominal operations, and particularly in the vicinity of Cleveland, was uncontradicted. Whether or not Dr. Hall had a right to rely on the accuracy of the nurse was a different question. The service of the sponge nurse reduced the hazards of the operating room and was one of the facilities provided by the operating surgeon for guarding against accidents, and the trial court properly permitted the system to be shown as reflecting the care and caution of the surgeon. That system, the court said, cannot be accepted as the only security on which the patient has a right to rely and as displacing the personal care and caution which she had a right to expect from Dr. Hall himself. The duty still rested on him to employ his own skill and observation to assure himself that no sponges had been allowed to remain in the wound. The surgeon being charged with the duty of removing the sponges, ordinary care and caution forbids that he should have the right to delegate that responsibility in an unqualified manner to any system, however efficient. It was self-evident, the court said, that some one was guilty of negligence. If the sponge left in the operating wound was used for packing purposes, the usual precaution of attaching a hemostat was omitted. If it was used for wiping purposes, the surgeon or assistant surgeon who used it did not immediately remove it. The trial did not establish who was the negligent party. It is the province of the jury to determine whether all was done that reasonable care and skill required. This inquiry was not submitted to the jury, but they were only required to ascertain whether the system of employing a sponge nurse prevailed in the vicinity of Cleveland, and whether it was in fact employed by Dr. Hall, and the determination of that question in the affirmative required a verdict in favor of the defendant.

The overwhelming weight of authority, the court said, supports the general rule that customary general methods of conduct do not furnish a test which is conclusive or fix a standard. It is obviously a dangerous practice to permit any business, trade or profession to fix its own standards. The court concluded, both on reason and on authority, that the test of usage or practice of having a sponge nurse is competent as reflecting on the care and diligence of the surgeon, but that reliance on such custom alone is not a complete defense to the charge of negligence. The judgment of the court of appeals was reversed and the cause remanded for a new trial.

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Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Atlantic City, N. J., October 21-25. Dr. William P. Wherry, Medical Arts Building, Omaha, Executive Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Memphis, Tenn., September 16-18. Dr. James E. Davis, 1825 Geddes Avenue, Ann Arbor, Mich., Secretary.

American Child Health Association, Minneapolis, September 30-October 4. Dr. Philip Van Ingen, 125 East 71st Street, New York, Secretary.

American College of Surgeons, Chicago, October 14-18. Dr. F. H. Martin, 40 East Erie Street, Chicago, Director-General.

American Electrotherapeutic Association, Indianapolis, September 9-13. Dr. C. C. Vinton, Guildersleeve Ave., Rosedale, New York, Secretary.

American Public Health Association, Minneapolis, September 30-October 4. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Sec'y.

American Roentgen Ray Society, New York, September 17-20. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, Secretary.

Associated Anesthetists of the United States and Canada, Chicago, October 14-18. Dr. F. H. McMechan, 770 West Lake Road, Avon Lake, Ohio, Secretary.

Association of American Medical Colleges, New York, Oct. 28-30. Dr. Fred C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Association of Military Surgeons of the United States, Denver, September 26-28. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Central States Pediatric Society, Milwaukee, September 27-28. Dr. H. T. Price, Westinghouse Building, Pittsburgh, Secretary.

Delaware, Medical Society of, Farnhurst, October 8-10. Dr. James E. Brayshaw, Medical Arts Building, Wilmington, Secretary.

Indiana State Medical Association, Evansville, September 25-27. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Interstate Postgraduate Medical Association of North America, Detroit, October 21-23. Dr. Edwin Henes, Jr., 445 Milwaukee Street, Milwaukee, Executive Secretary.

Kentucky State Medical Association, Louisville, October 21-24. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Jackson, September 17-19. Dr. F. C. Warnshuis, G. R. National Bank Building, Grand Rapids, Secretary.

Nevada State Medical Association, Elko, September 27-28. Dr. H. J. Brown, Box 688, Reno, Secretary.

Pennsylvania, Medical Society of the State of, Erie, September 30-October 3. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Vermont State Medical Society, Bellows Falls, October 10-11. Dr. William G. Ricker, 29 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Charlottesville, October 22-24. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Western Association of Physical Therapy, Indianapolis, September 9-13. Dr. Charles Wood Fassett, 115 E. 31st St., Kansas City, Mo., Sec'y.

Wisconsin, State Medical Society of, Madison, September 10-13. Mr. J. G. Crownhart, 119 E. Washington Ave., Madison, Executive Sec'y.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Hygiene, Baltimore

10: 1-268 (July) 1929

Hypersensitiveness to Diphtheria Bacilli: Range of Specificity of Hypersensitive Immediate Skin Reactions to Nontoxicogenic Corynebacteria. J. M. Neill, W. L. Fleming and A. L. Harris, Nashville, Tenn.—p. 1.

*Seasonal Variation of Diphtheria Antitoxin Content of Blood of Adults and Adolescents. R. G. Perkins, R. H. Heeren, E. Megrail and A. B. Grossman, Cleveland.—p. 13.

Infection of Parasite-Free Chicks with Intestinal Protozoa from Birds and Other Animals. R. Hegner, Baltimore.—p. 33.

Comparative Adaptability of Trichomonas Muris and Trichomonas Parva to Culture Mediums and to Changes in Intestinal Flora of Rats. H. L. Ratcliffe, Baltimore.—p. 63.

Entomologic Investigations in Connection with Carrion's Disease. R. C. Shannon, Baltimore.—p. 78.

Present Knowledge of American Species of Phlebotomus Rondani (Diptera, Psychodidae). H. G. Dyar.—p. 112.

Host Induced Variation in Growth Curve of Dog Hookworm, Ancylostoma Caninum. J. A. Scott, Baltimore.—p. 125.

Suitability of Various Bacteria as Food for Hookworm Larvae. O. R. McCoy, Baltimore.—p. 140.

Method for Isolation of Ascaris Eggs from Soil. L. A. Spindler, Baltimore.—p. 157.

*Effect of Sun and Air and Air Baths on Respiratory Gaseous Exchange in Man. W. A. Jakowenko, Leningrad, U. S. S. R.—p. 165.

Kala Azar Transmission Problem: Field and Laboratory Studies in China: II. Susceptibility of Various Rodents to Infection with Leishmania Donovani. C. W. Young, M. Hertig and P. Liu, Peking, China.—p. 183.

Extent to Which Residence Influences Recorded Death Rates from Cancer in State of New York. J. V. Deporte, New York.—p. 201.

Respiratory Immunity in Rabbits: VIII. Rabbits Immunized with Pneumococcus Types II, III and IV Resist Intranasal Infection with Type I. C. G. Bull and C. M. McKee, Baltimore.—p. 229.

Respiratory Anaphylaxis (Asthma) and Ricin Poisoning Induced with Castor Bean Dust. Bret Ratner and H. L. Gruehl, New York.—p. 236.

Effect of Food on Phototropism of Mosquito Larvae. W. Rudolfs and J. B. Lackey, New Brunswick, N. J.—p. 245.

*Sinusitis and Otitis in Swimmers. G. C. Saunders, Rochester, Minn.—p. 253.

Production of Anaphylaxis in Crawfish. J. Krafka, Jr., Augusta, Ga.—p. 261.

Nuts as Possible Source of Escherichia Coli Found in Candy. J. Weinzirl, Seattle.—p. 265.

Seasonal Variation of Diphtheria Antitoxin Content of Blood.—Perkins et al. show that a group of schoolboys from 11 to 14 years of age living and going to school in a crowded district present a definite picture showing low diphtheria antitoxin content in the late winter and in the spring, whereas a group of adults whose occupation brings them into conditions of exposure not too dissimilar show a totally different picture. No evidence has been found which might indicate that the normal autumn rise in diphtheria incidence is related to the antitoxin content of the blood of these persons; the drop in incidence in the late summer coincides with the general rise in antitoxin content in the series, but in view of the negative correlation at the time of increasing incidence it is at least questionable whether the recorded observations are significant. This work confirms Fitzgerald in demonstrating the existence of adults with practically no antitoxin in the blood, and shows also that there may be a certain number of adolescents with similar characteristics. The investigation strengthens the probability that the fundamental factor in seasonal variation in diphtheria is a modification of the resistance of the individual at the actual portal of entry.

Effect of Sun and Air Baths on Respiratory Gaseous Exchange in Man.—The respiratory metabolism, determined in an individual after a fast of twelve hours and after an hour's rest in bed in a health resort, Jakowenko says, is in the majority of cases increased on comparison with Harris-Benedict's normal figures. The conditions and the life in a health resort (light clothes, air and sun baths, sea bathing, emotions) are as a rule sufficient to produce an increase of the metabolism in the majority of people. However, there are some whose respiratory exchange does not rise in similar surroundings above Harris-Benedict's figures. During air and sun baths and during air baths, the gaseous exchange in man tends to show a further increase. In certain conditions this metabolism may decrease below the level of the basal metabolism that had been observed in the same person before the bath. The height of the respiratory gaseous exchange in man during air and sun baths and air baths depends among other things on the combination of meteorological conditions, either producing a relatively strong cooling of the human body or favoring an increase of heat in it; these factors are temperature, humidity, air movement and the intensity of solar and skylight radiation. Among all the climatic factors that favor the cooling of the body and the increase of gaseous exchange in man during air baths on the beach, the rate of air movement is of the greatest importance. Besides these external factors there are also internal constitutional factors, which determine the amplitude of fluctuations shown by the gaseous exchange of man at the health resort. Jakowenko believes that a moderate increase in the gaseous exchange of man should be the purpose of climatic treatment. The latter proves to be beneficial to a diseased and exhausted body because of its production of an increased activity of specific vegetative organs (the liver, the heart), of the endocrine system and of the oxidating processes in the tissues.

Sinusitis and Otitis in Swimmers.—Saunders is convinced that the value of swimming as a means of exercise more than compensates for its dangers for the normal person. Furthermore, the dangers can be greatly lessened. Matters that especially require attention are means of reducing trauma to the nose and ears and correct habits of breathing. Methods of plugging the nose are worth attention. Saunders has devised a clamp to close the nostrils. It is a strip of sheet copper or of other malleable metal about half an inch wide and bent to conform to the external nose. It compresses the alae when it is held in place. An elastic band which is fastened to the metal either by stitching or by adhesive tape goes around the head. This device is easily made and has proved efficient in actual practice. It can be put on or taken off quickly and thus relieves the swimmer of the necessity of having the nares plugged for long periods of time. It would probably be unsatisfactory in high and fancy diving; in these cases plugs are better. The use of an oil spray in the nose before entering the water has been suggested. This helpful measure is almost universally neglected. Persons with narrow nasal passages, deviated septums and other anatomic abnormalities are much more prone to infection than those who have unobstructed sinus drainage. This leads to the suggestion that all persons wishing to do diving or play polo first have a nasal examination, with subsequent medical or surgical treatment if indicated. To these local measures of reducing trauma and consequently the likelihood of bacterial invasion should be added the general measure of supervision of the length of the swimming period. Forty-five minutes in the water is probably long enough. There is evidence that bodily resistance is reduced with exposures longer than this. Correct habits of breathing are of major importance.

American J. Ophthalmology, Chicago

12: 633-710 (Aug.) 1929

Circinate Retinitis: Report of a Case. H. W. Scarlett, Philadelphia.—p. 633.

Epithelial Cell Inclusions of Trachoma. I. A. Bengtson.—p. 637.

Findings of Bacterium Granulosis (Noguchi) in Trachoma. W. C. Finnoff and P. Thygeson, Denver.—p. 651.

Anterior and Posterior Dialysis of Retina. W. O. Martin, Jr., Atlanta, Ga.—p. 652.

Method of Mapping Scotomas with Tangent Screen by Binocular Fixation. A. Cowan, Philadelphia, and M. E. Marcove, Denver.—p. 656.

Perimetry: 3. Errors of Refraction, Age and Sex in Relation to Size of Form Field. C. E. Ferree, G. Rand and M. M. Monroe, Baltimore.—p. 659.

Melanotic Mixed Cell Sarcoma of Choroid. L. L. McCoy, Seattle.—p. 664.

Treatment of Incipient Cataract. T. H. Shastid, Duluth, Minn.—p. 665.

Peculiar Type of Cataract. R. E. Wright, Madras, India.—p. 666.

American J. Pathology, Boston

5: 333-438 (July) 1929

*Electric Shock. H. E. MacMahon, Boston.—p. 333.
Meningitis Due to Endomyces Capsulatus (New Species): Case. A. G. Rewbridge, Boston, and C. W. Dodge and T. T. Ayers, Cambridge, Mass.—p. 349.
Light as Factor in Impregnation of Brain Sections with Ammoniacal Silver Salts. N. C. Foot, Cincinnati.—p. 365.
Multiple Focal Splenitis of Guinea-Pigs. W. H. Feldman, Rochester, Minn.—p. 371.
Diagnostic Reliability of Frozen Sections. W. C. MacCarty, Rochester, Minn.—p. 377.
Pathology of Hemangioma of Bone. P. C. Bucy, Chicago.—p. 381.
Congenital Malformation of Heart with Anomalous Insertion of Pulmonary Veins, Absence of Spleen, Situs Inversus of Abdominal Viscera and Other Developmental Errors: Case. C. H. Hu, Peiping, China.—p. 389.
*Involvement of Medium Sized Arteries Associated with Syphilitic Aortitis. O. Saphir, Cleveland.—p. 397.
Accessory Pancreases: Case. R. A. Moore, Cleveland.—p. 407.
Effect of Potassium Iodide, Thyroid Extract and Anterior Pituitary Extract on Regeneration and Early Compensatory Hypertrophy of Thyroid Gland. S. H. Gray, St. Louis.—p. 415.
Auto and Homoiotransplantation of Cross-Striated Muscle Tissue in Rat. J. Elson, St. Louis.—p. 425.

Electrical Shock.—The literature dealing with the pathologic changes in the nervous system of electrocuted animals is reviewed by MacMahon, and it is shown that the lesions are confined almost entirely to the nervous system and skeletal muscle.

Involvement of Medium Sized Arteries Associated with Syphilitic Aortitis.—Among fifty cases of syphilitic aortitis reviewed by Saphir, the innominate artery showed syphilitic changes in thirty-three, the carotid in twenty-nine, the superior mesenteric in ten, the inferior mesenteric in three, the common iliac in ten, and the femoral artery in seven. The subclavian artery was examined in twenty-nine cases, fifteen of which showed syphilitic lesions. The syphilitic lesions were characterized by endarteritis of the vasa vasorum, and perivascular infiltration of lymphocytes in the adventitia. The media of the elastic type of arteries showed an interruption of the continuity of the elastic fibers and fibrotic areas combined with circumscribed lymphocytic infiltrations. The media of the muscular type of arteries only rarely showed changes. In the intima, circumscribed button-like areas of fibrosis, without degenerative changes, were found very frequently.

American J. Roentgenol. & Radium Therapy, New York

22: 1-106 (July) 1929

Congenital Bone Syphilis. E. P. Pendergrass and R. S. Bromer, Philadelphia.—p. 1.
Pulmonary Syphilis: Case. R. G. Allison, Minneapolis.—p. 21.
Cholecystography. C. J. Johannesson, Walla Walla, Wash.—p. 25.
Rugae Gastricae: Importance in Roentgenologic Diagnosis. M. Golob, New York.—p. 33.
Roentgen Study of Lesions of Stomach and Duodenum with Analysis of Errors in Diagnosis. D. B. Harding, Lexington, Ky.—p. 36.
Scleroderma with Sclerodactylia: Three Cases with Roentgen Findings. L. Edeiken, Philadelphia.—p. 42.
Roentgen-Ray Protection. L. S. Taylor, Washington, D. C.—p. 45.
Experiences to Date with Four Gram Radium Element Pack. J. J. Duffy, New York.—p. 52.
Introducer for Lipiodol in Lung Mapping. M. C. Myerson, New York.—p. 69.
Head-Holding Device for Examination of Cervical Spine. G. E. Pfahler, Philadelphia.—p. 71.
Carrier for Radium Packs and Molds. G. E. Pfahler, Philadelphia.—p. 72.

American J. Syphilis, St. Louis

13: 313-488 (July) 1929

*Febrile Body Temperatures as Possible Adjunct Treatment in Wassermann-Fast Syphilitic Patients. L. D. Cady and F. H. Ewerhardt, St. Louis.—p. 313.
*Syphilitic Headaches. J. Kopecky, Galveston, Texas.—p. 332.
*Previous Treatment of Patients Who Have Developed Neurosyphilis. F. E. Weatherby, Fort Sill, Okla.—p. 339.
Nonspecific and Malarial Therapy in Neurosyphilis. H. H. Reese, Madison, Wis.—p. 348.
Acute Syphilitic Meningitis. A. D. Carr, St. Louis.—p. 360.
Cystometric Diagnosis of Central Nervous System Syphilis: New Appreciation of Term Neurogenic Bladder. D. K. Rose and R. Deakin, St. Louis.—p. 371.
*Syphilis of Stomach: Relation to Linitis Plastica. H. A. Singer, Chicago.—p. 391.
Syphilitic Heart Disease. L. T. Gager, Washington, D. C.—p. 411.
Concerning Cultivation of Spirochaeta Pallida. C. C. Kast and J. A. Kolmer, Philadelphia.—p. 419.
Silver-Starch-Gelatin Method for Demonstration of Spirochetes in Single Tissue Sections. A. S. Warthin, Ann Arbor, Mich.—p. 454.
Comparison of Method of Staining Spirochaeta Pallida in Tissue. R. E. Olsen, Ann Arbor, Mich.—p. 463.

Febrile Body Temperatures as Adjunct Treatment in Wassermann-Fast Syphilitic Patients.—An extensive investigation made by Cady and Ewerhardt has not revealed any consistent evidence that hot baths are useful in Wassermann-fast patients. The data suggest, but do not prove, that the serologic reactions are rendered more labile during relatively short periods of thermotherapy. Nevertheless the improvement in the patient's sense of well being and the apparent serologic responses in a small percentage have led the authors to continue their observations on thermotherapy in Wassermann-fast patients.

Syphilitic Headaches.—Of 4,300 new medical patients, 882 had syphilis; 632 of these complained primarily of pain which, Kopecky says, was regarded as being of syphilitic origin; 131 gave headache as their chief complaint. In most of these cases, the headache seemed to be toxic or functional in origin; evidence of structural changes was present in only a small number. He suggests that all patients with obscure persistent headaches should have the benefit of a painstaking examination for syphilis.

Previous Treatment of Patients with Neurosyphilis.—No evidence that treatment with arsphenamine in the early stages of syphilis predisposes to the development of paresis was found by Weatherby in his study of 280 cases. Paresis usually develops in the undiagnosed, neglected and inadequately treated patients. Arsphenamine appears to predispose to early onset of cerebrospinal syphilis. However, untreated patients with apparently late onset might have had early cerebrospinal involvement and this might have been discovered if they had been examined in early stages of their infection. The factor of neglect does not appear as prominently in tabes and in cases of psychosis with cerebral syphilis as it does in the paresis, but the majority had no previous treatment. In spite of malaria at various intervals after syphilitic infection, paresis and other forms of neurosyphilis can develop.

Syphilis of Stomach: Relation to Linitis Plastica.—In each of the two cases described by Singer the general characteristics of a linitis plastica involving the distal portion of the stomach were present. In both instances a careful analysis of the clinical, roentgenologic, serologic and pathologico-anatomic data furnished sufficient cumulative evidence to justify the assumption of a syphilitic etiology. On the basis of the study of these and similar cases, Singer assumes that syphilis of the stomach bears a close relationship to so-called benign linitis plastica in that the latter frequently represents a healing or healed stage of the former. He believes furthermore that in not a few of the cases reported as hypertrophic pyloric stenosis, hour-glass stomach, hypertrophic gastric sclerosis (linitis plastica) and subacute or chronic phlegmonous gastritis in which the etiology was considered obscure, the primary change was a syphilitic one.

American Review Tuberculosis, Baltimore

20: 141-274 (Aug.) 1929

Epidemiology and Control of Tuberculosis. E. L. Opie, Philadelphia.—p. 141.
*Developmental Cycle of Tubercle Bacillus as Revealed by Single Cell Studies. M. C. Kahn, New York.—p. 150.
Tissue Reactions to Primary Infection and Reinfection with Tubercle Bacillus: I. Histologic Examination of Omentum and Other Subperitoneal Tissues. L. U. Gardner, Saranac Lake, N. Y.—p. 201.
*Histologic Studies on Healed Tuberculous Primary Lesions of Lung. R. H. Jaffé and S. A. Levinson, Chicago.—p. 214.
Culturing Bovine Tubercle Bacilli. M. Evanoff and H. C. Sweany, Chicago.—p. 227.
*Treatment of Tuberculous Pericarditis with Effusion by Injection of Air and Lipiodol into Pericardial Sac. W. Ackermann, New York.—p. 236.
Pathogenesis of Pulmonary Tuberculosis and Complications. A. Arkin, Chicago.—p. 243.
Tuberculosis and Goiter. L. W. Frank, Wheat Ridge, Colo.—p. 252.
Surgical Management of Tuberculosis Patient with Exophthalmic Goiter. J. E. Struthers, Denver, Colo.—p. 257.
Physiologic Effects of Climate Applicable in Treatment of Tuberculosis. A. R. Masten, Wheat Ridge, Colo.—p. 261.
*Tuberculosis and Malignant Neoplasia: Seven Cases. L. V. Schneider, State Sanatorium, Md.—p. 271.

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Developmental Cycle of Tubercle Bacillus.—With the aid of the Chambers micromanipulator a technic has been developed by Kahn that has made it possible to grow a single tubercle bacillus or small groups of from two to six microorganisms in individual microdroplets of Long's medium for varying periods of time. Periodic microscopic observations were made on these microcultures, and in some cases the developmental processes were followed to their completion.

Healed Tuberculous Primary Lesions of Lung.—The tendency of the tuberculous primary lesion of the lung to become replaced by bone is explained by Jaffé and Levinson on the basis of an irritating action of the calcified center on the specific capsule. This irritating action leads to an ingrowth of granulation tissue, which, bathed with tissue fluids oversaturated with calcium salts, undergoes osseous metaplasia. The osseous metaplasia is characteristic of the pulmonary primary lesion and is perhaps due to its peculiar histogenesis. It is seldom observed in the calcified and encapsulated tubercles of the regional lymph nodes and of the reinfections.

Treatment of Tuberculous Pericarditis with Effusion.—In the case cited, Ackermann performed artificial pneumopericardium without discomfort to the patient. The injection of air gives greater relief than does aspiration of the exudate alone. The presence of air delays the reformation of exudate. By holding apart the two layers of the pericardium, friction rub and formation of adhesions are prevented. On roentgen examination the air in the pericardium permits one to see how completely the exudate has been evacuated. The injection of iodized oil sets up an irritation, with elevation of temperature, and this seems to have a great effect in reducing the vitality and the number of tubercle bacilli. Three weeks after the injection of iodized oil the patient's temperature declined to about normal, and has remained at the same level until the present date.

Tuberculosis and Malignant Neoplasia. — Schneider reports seven cases of tuberculosis in which a malignant neoplasm was coexistent. They included cancer of the uterus, stomach, lung and larynx and one melanotic sarcoma of the back.

Annals of Medical History, New York

1: 363-488 (July) 1929

Charles Edward Isaacs. R. N. Bieter, Minneapolis.—p. 363.
Date of Galen's Birth. J. Walsh, Philadelphia.—p. 378.
Mental Afflictions of Charles and Mary Lamb. R. L. Pitfield, Philadelphia.—p. 383.
Some Diseases of Ancient Man. J. L. Miller, Chicago.—p. 394.
Copy of Jenner Note Book. L. Crummer, Omaha.—p. 403.
Reminiscences from Early Days of Pennsylvania Hospital. E. A. Strecker, Philadelphia.—p. 429.
Larrey, Napoleon's Chief Surgeon. E. R. Wiese, Ingomar, Pa.—p. 435.
Medical Philately. F. H. Garrison, Washington, D. C.—p. 451.
Epilepsy in Light of History. E. H. Pirkner, New York.—p. 453.

Archives of Internal Medicine, Chicago

44: 1-154 (July) 1929

*Opium Addiction: VI. Effects of Abrupt Withdrawal Followed by Readministration of Morphine in Human Addicts. A. B. Light and E. G. Torrance, Philadelphia.—p. 1.
*Regulation of Blood Sugar in Idiopathic Steatorrhea (Sprue and Gee-Herter's Disease): I. Low Blood Sugar Curve. T. E. H. Thaysen and A. Norgaard, Copenhagen, Denmark.—p. 17.
*Contour of Normal and Tuberculous Chests. S. A. Weisman, Minneapolis.—p. 29.
*Sugar Tolerance in Arthritis: I. Chronic Infectious Arthritis. B. H. Archer, New York.—p. 37.
*Fructosuria. P. A. Heeres and H. Vos, Groningen, Holland.—p. 47.
*Hyperinsulinism: Two Cases. F. N. Allan, Rochester, Minn.—p. 65. Improved Duodenal Tube. C. V. Richards, Baltimore.—p. 71.
*Toxic Adenoma of Thyroid. S. Ginsburg, New York.—p. 73. Effect of Purine Base Diuretics on Coronary Flow. N. C. Gilbert and G. K. Fenn, Chicago.—p. 118.
*Undulant Fever Presenting Clinical Syndrome of Intermittent Hydrarthrosis. B. M. Baker, Jr., Baltimore.—p. 128.
Pathologic Aspect of Some Epilepsies. A. Gordon, Philadelphia.—p. 142.
Motility of Rectum in Normal and Constipated Subjects. L. E. Hines, H. C. Lueth and A. C. Ivy, Chicago.—p. 147.

Effects of Abrupt Withdrawal of Morphine in Human Addicts.—Light and Torrance report on the effects of abrupt withdrawal followed by readministration of morphine in human addicts, with special reference to the composition of the blood, the circulation and the metabolism. Abrupt withdrawal of morphine for a period of twenty-four hours in four addicts resulted in the appearance of mild withdrawal symptoms. These symptoms were accompanied by negligible changes in the pulse rate, leukocyte count and basal metabolic rate. Changes in behavior and irritability would indicate that mental suffering begins before physical suffering. In ten addicts, abrupt withdrawal of morphine for a period of forty-eight hours resulted in the appearance of severe withdrawal symptoms. One case showed diplopia. These changes were accompanied by a definite leukocytosis in eight of the ten cases, concentration of the blood in all cases and a slight rise in the cholesterol of the blood in seven of the ten cases. Albuminuria was found in two cases. The p_H of the blood, the urea nitrogen and the sugar showed no changes. Considerable loss of weight occurred during the forty-eight hour withdrawal period. Following the readministration of the drug and relief from subjective symptoms, the increased leukocyte count and concentration of the blood remained for several hours, as did the diplopia and muscular twitchings of the face. A rise in the percentage saturation of the oxygen of the venous blood was noted in all cases following the readministration of the morphine. The circulatory changes noted were a slight increase in the pulse rate and a slight fall in systolic pressure. The staircase climbing test and Schneider's test showed a decrease in the efficiency of the circulation following the readministration of the drug when compared to the results obtained at the end of the forty-eight hour withdrawal period.

Regulation of Blood Sugar in Idiopathic Steatorrhea.—The term "low blood sugar curve" is proposed by Thaysen and Norgaard and defined as a curve with a rise of 40 mg. per hundred cubic centimeters or less. The frequent occurrence of low blood sugar curves in idiopathic steatorrhea (tropical sprue, nontropical sprue and intestinal infantilism) is pointed out, and its differential diagnostic significance mentioned. A case of nontropical sprue is described in which the low blood sugar curve became normal at the same time that the patient showed signs of tetany.

Contour of Normal and Tuberculous Chests.—Weisman feels that the tuberculous chest appears to be round, deep and narrow. The healthy chest tends to be flat and wide. Exercise in early childhood can help to develop properly the undeveloped chest.

Sugar Tolerance in Chronic Infectious Arthritis.—In a study of twenty typical cases of chronic infectious arthritis, no evidence was found by Archer of a diminished sugar tolerance. The sugar tolerance in this disease does not seem to vary with the severity of the process. Foci of infection apparently have no specific action on the sugar storage mechanism.

Fructosuria.—An extensive investigation was made by Heeres and Vos in a case of true (essential) fructosuria, and the following facts were determined: Fructosuria disappears at once if only food free from fructose is consumed. Independent of the quantity of fructose administered, a fairly equal part of it is excreted by the urine (about 14 per cent). Contrary to the results under normal conditions, the administration of fructose leads to a considerable rise of the blood sugar content due almost entirely to fructosemia. After the administration of fructose in divided doses, as much is excreted as when fructose is given in a single dose. The intravenous introduction of fructose produces fructosuria of the same degree as administration by mouth. Insulin has no influence on the fructosuria. Fructose, given in combination with other sugars or as a polysaccharide, results in a more severe fructosuria than when nothing else is given. Insulin does not produce fructosuria, probably because it is not broken up in the intestine into fructose. The metabolism of dextrose, galactose, maltose and mannose is not disturbed. Sorbose (a ketose like fructose), the only known sugar that is normally excreted in small quantities in the urine, was excreted in large quantities in the urine in the case reported by the authors. The keto group was probably responsible for this metabolic disturbance. After the administration of fructose, there is no rise in the respiratory quotient, contrary to what is seen in normal conditions. Fructose injected into the vein immediately after the solution has been prepared leads to a greater degree of fructosuria than the intravenous introduction of a solution prepared some time prior to the injection. Crystalline fructose, administered by rectum, produces a more severe fructosuria than fructose given by mouth.

Hyperinsulinism.—Hyperinsulinism due to overproduction of insulin from a tumor of the islands of the pancreas is now established as a disease entity. Allan feels that it is probable that hyperinsulinism may also be due to a functional disturbance of the pancreas. The differential diagnosis of hypoglycemia due to hyperinsulinism and hypoglycemia due to selective hepatic insufficiency is a difficult clinical problem. Two criteria may have value in differentiation: the effect of epinephrine hydrochloride and solution of pituitary, and the amount of sugar required to maintain the blood sugar level. When the hypoglycemic tendency is so strong that the patient is incapacitated, surgical treatment appears to promise relief. Three cases are described in which there was a constant tendency to severe hypoglycemia attributed to hyperinsulinism. In one case, there was a carcinoma of the islands of Langerhans. In the second case, surgical exploration revealed a normal appearing pancreas. Resection of a part of the pancreas was followed by considerable relief. The third patient in whom medical treatment alone was given is still under observation.

Toxic Adenoma of Thyroid.—A review of the literature and personal observations lead Ginsburg to conclude that surgical intervention is no longer the only means of relief in dealing with toxic adenoma of the thyroid. Radium therapy efficiently applied not only removes the thyrotoxic symptoms but also shrinks the tumor growth and thereby removes the compression phenomena of toxic adenoma of the thyroid. Radium therapy, safe, efficient, free from surgical mortality, deserved first choice not only in dealing with exophthalmic goiter but also in the treatment of toxic adenoma of the thyroid. To obtain the best results in the treatment of toxic adenoma as well as in that of exophthalmic goiter, a combination of radium therapy plus rest in bed, proper diet and medication is highly desirable.

Intermittent Hydrarthrosis in Undulant Fever.—A case of infection by *Bacillus abortus* arising in Virginia is reported by Baker. In addition to many of the features of undulant fever the patient presented a periodic swelling of the knee joints, diagnosed as intermittent hydrarthrosis. Organisms of the *Brucella melitensis* group were isolated repeatedly from the blood stream and from fluid from the knee joints. Specific agglutinins appeared in the blood after the administration of an autogenous vaccine. Definite disappearance of the signs and symptoms of the infectious disease followed the administration of *Brucella melitensis* vaccine and serum from a patient who had recovered from undulant fever. There was amelioration of the subjective joint disturbances and a temporary alteration in the hydrarthrosis following this treatment. It is concluded that in this case the intermittent hydrarthrosis was part of the general picture of infection from *Brucella melitensis*, and it is suggested that infection by a member of this group of organisms might prove to be the cause of the clinical syndrome, intermittent hydrarthrosis, in other patients. During the period in which *Brucella melitensis* was cultivated from the blood and urine, there were no agglutinins in the patient's serum. Thus differential diagnosis cannot be based solely on agglutination reactions.

Archives of Neurol. & Psychiatry, Chicago

22: 187-424 (Aug.) 1929

Somatic and Visceral Connections of Diencephalon. G. C. Huber and E. C. Crosby, Ann Arbor, Mich.—p. 187.
Central Representation of Sympathetic System. P. Bard, Princeton, N. J.—p. 230.
Tonus in Skeletal Muscle in Relation to Sympathetic Innervation. A. Forbes, Boston.—p. 247.
Parasympathetic Control of Muscle Tonus. S. W. Ranson, Chicago.—p. 265.
Sympathetic Division of Autonomic System in Relation to Homeostasis. W. B. Cannon, Boston.—p. 282.
Functional Significance of Histologic Character in Preganglionic Visceral Neurons. E. F. Malone, Cincinnati.—p. 295.
*Angina Pectoris: Relief of Pain by Paravertebral Alcohol Block of Upper Dorsal Sympathetic Rami. J. C. White, Boston.—p. 302.
Rôle of Sympathetic Nervous System in Painful Diseases of Face. M. M. Peet, Ann Arbor, Mich.—p. 313.
*Physiologic Effects of Thoracic and Lumbar Sympathetic Ganglionectomy or Section of Trunk. G. E. Brown and A. W. Adson, Rochester, Minn.—p. 322.
*Diencephalic Autonomic Epilepsy. W. Penfield, Montreal, Canada.—p. 358.
Nerve Supply of Cerebral Blood Vessels. G. B. Hassin, Chicago.—p. 375.

Paravertebral Alcohol Block for Relieving Pain in Angina Pectoris.—White's experience leads him to recommend paravertebral injections of alcohol as a logical and safe method of treatment in severe angina pectoris. The method in its present status gives promise of being distinctly less dangerous and of giving results as good as sympathectomy, if not better.

Physiologic Effects of Thoracic and Lumbar Sympathetic Ganglionectomy.—Physiologic studies carried out by Brown and Adson in thirty-six cases before and after lumbar ganglionectomy demonstrated certain changes after operation. Marked vasodilatation of the arteries of the feet and lower part of the legs, as measured by thermometric methods, persisted for periods as long as three years. Abolition of reflex sweating of the feet and the lower part of the legs approximately to the level of the knees was a constant observation. Loss of pilomotor reaction occurred in approximately the same areas as did reflex sweating. Following excision of the first and second thoracic ganglions the following conditions were observed: marked vasodilatation of the arteries of the hands, and mild vasodilatation of the arteries of the face, neck and upper part of the trunk, as measured by increases in the surface temperature. Loss of reflex sweating and pilomotor reaction occurred, roughly, in the same region. The reaction of cardiac acceleration was preserved but possibly was diminished in degree. Horner's syndrome of variable intensity and persistence was a constant observation. The period of observation after dorsal ganglionectomy varied from one to six months, and vasodilatation did not diminish in that time. The physiologic changes, indicative of a profound and apparently lasting effect on the vasomotor nerves, with vasodilatation, furnish adequate proof of the efficacy of these operative measures in certain forms of peripheral vascular disease.

Diencephalic Autonomic Epilepsy.—A series of motor phenomena in the control of the vegetative nervous system that are analogous to attacks of jacksonian epilepsy are described by Penfield. The irritative source of the attacks was evidently an encapsulated tumor which periodically pressed on the thalamus of both sides, as described. Autonomic epilepsy is a new conception in neurology. It is suggested as a result of the study of this case that the vegetative nervous system may have a representation as high as the anterior nucleus of the thalamus. No attempt, however, is made to isolate the involved centers.

Archives of Otolaryngology, Chicago

10: 1-112 (July) 1929

Cytologic Examination of Antrum. E. C. Sewall and L. Hunnicutt, San Francisco.—p. 1.
Herpes Laryngis. H. R. Landon, New York.—p. 16.
Acute Suppuration of Temporal Bone: Case. E. W. Hagens, Chicago.—p. 21.
Congenital Arteriovenous Fistula in Tympanum. F. Smith, Grand Rapids, Mich.—p. 32.
Intracranial Complications Associated with Disease of Sphenoid Bone. J. G. Druss, New York.—p. 39.
Relative Importance of Disease of Nasal Sinuses as Cause of Disease of Optic Nerves. E. C. Ellett, Memphis, Tenn.—p. 49.
Ozena: Cases. J. I. Kemler, Baltimore.—p. 61.
Adenoids in Adults. R. F. Nelson, Oakland, Calif.—p. 70.
Treatment of Polypoid Sinusitis. G. A. Robinson, New York.—p. 72.
Pipe Stem in Left Main Stem Bronchus of Child: Case. T. E. Fuller, Texarkana, Texas.—p. 73.
Zinc Ionization as Treatment for Intermittent Nasal Obstruction. M. L. Harris, New York.—p. 75.
Paranasal Cavities. D. C. Smyth, Boston.—p. 77.

Archives of Surgery, Chicago

19: 169-374 (Aug.) 1929

*Osteitis Fibrosa and Giant Cell Tumor. C. F. Geschickter and M. M. Copeland, Baltimore, with foreword by J. C. Bloodgood, Baltimore.—p. 169.
*Relation of Suprarenal Gland to Toxemia of Intestinal Obstruction. R. A. Cutting, New Orleans.—p. 272.
Acute Complete Obstruction of Duodenum Following Gastrojejunostomy. J. E. Summers, Omaha.—p. 292.
Pericardotomy for Pyopericardium. L. G. Bowers, Dayton, Ohio.—p. 301.
*Ganglioneuroma of Mediastinum Requiring Surgical Intervention for Relief of Obstructive Symptoms. T. F. Riggs and L. P. Good, Pierre, S. D.—p. 309.
Variations in Extrahepatic Biliary Tract. M. G. Beaver, Rochester, Minn.—p. 321.

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Review of Urologic Surgery. A. J. Scholl and A. A. Kutzmann, Los Angeles, E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; G. S. Foulds, Toronto, Canada, and J. Verbrugge, Antwerp, Belgium. —p. 327.

Osteitis Fibrosa and Giant Cell Tumor.—In an analysis made by Geschickter and Copeland of more than 400 tumors in the giant cell group, a pathologic relationship was established between the bone cyst, giant cell tumor of the long bones and skull, giant cell epulis of the alveolar borders and giant cell tumors of the tendon sheaths. The usual bone cyst occurring in the metaphyseal region of the long bones of young patients was shown to be a healing phase of giant cell tumor—a conclusion based on clinical, pathologic and anatomic observations and demonstrated by an analysis of numerous transitional lesions between these two entities. Giant cell tumors of the skull and long bones, epulides of the alveolar border, and giant cell xanthomas of the tendon sheaths were found to be fundamentally related to a transitional process characterizing the histogenesis of permanent bone, via the indirect route of substitution bone. This transition process underlying all of these tumors, as shown by embryologic studies, involves a proliferation of giant cell osteoclasts, the function of which is to initiate the canalization and vascularization of the preliminary calcified structure. In the long bones the preliminary calcified structure is calcified cartilage, and this is resorbed by a proliferation of giant cells in the epiphyseal region—a distortion of this proliferative process leading to giant cell tumor. In the skull a similar giant cell hyperplasia characterizes certain cartilaginous centers of ossification, and giant cell tumors, it was demonstrated, occur only at such sites in the portions of the skull derived from cartilage and not in the membranous bones. In epulides of the alveolar border, the temporary calcified structures are the roots of the deciduous teeth, about which giant cell odontoclasts proliferate, attacking the cementum to bring about shedding of these deciduous structures. Here again this normal giant cell proliferation forms the basis for giant cell tumors at these sites resulting in the epulis of the alveolar border. In the so-called xanthomas of the tendon sheaths containing giant cells, the initial calcified structures are the sesamoid bones derived from fibrocartilage, and giant cell tumors of the tendon sheaths were shown to arise only at the sites in which these small bones are implanted in the tendons. Evidence was advanced to show that the factor superimposed on this most important transitional giant cell proliferation, necessary to the production of giant cell tumor, was a disturbance of the vascular supply to these regions following trauma. But in each instance, the underlying normal histogenic function of giant cell proliferation was stressed as the essential factor, and it was pointed out that this histogenic basis necessitates the view that giant cell tumors are neoplastic and not inflammatory in origin. The importance of this histogenic conception for the analysis of other tumors is emphasized.

Relation of Suprarenal Gland to Toxemia of Intestinal Obstruction.—Cutting has determined experimentally that the lethal dose of toxin derived from the mucosa and intestinal contents of animals in which obstruction has been produced is much less for doubly suprarenalectomized animals than for normal ones. The suprarenal glands evidently serve a definite function in combating a toxemia produced by the injection of toxin so derived. The severity of the symptoms and signs of such a toxemia is a false guide to the prognosis in cases in which the suprarenals cannot function.

Surgical Intervention of Obstructive Symptoms in Ganglioneuroma of Mediastinum.—A case of ganglioneuroma arising from the thoracic or the cervical segments of the sympathetic system is reported by Riggs and Good. A boy, aged 4 years, complained of difficulty in breathing and of swelling in the right side of the neck. The duration of the tumor was twenty-two months; that of the acute symptoms, three months. Operation was performed for relief of the tracheal obstruction; the complete removal of the growth was not possible. Complete relief was obtained for sixteen months. Death followed one month after the recurrence of symptoms. Pathologically, the tumor showed typical ganglion cells in a bed of nonmedullated nerve fibers, some ganglion cells showing cystic degeneration.

Canadian Public Health Journal, Toronto

20: 375-426 (Aug.) 1929

Leptospira Icterohemorrhagia: Occurrence in Wild Rats at Toronto. G. C. Cameron and D. A. Irwin, Toronto.—p. 386.
Problems of City Medical Health Officer. W. R. Coles, Regina.—p. 393.
Some Aspects of Mental Hygiene of Childhood. B. Silverman, Montreal. —p. 398.

Journal of Exper. Medicine, Baltimore

50: 143-262 (Aug. 1) 1929

Rôle of Carbohydrates in Biologic Oxidations and Reductions: Experiments with Pneumococcus. R. Dubos, Baltimore.—p. 143.
Experimental Pneumonia in Guinea-Pigs: II. Effect of Antiautolysate Serums on Pneumococcus Pneumonia. J. T. Parker, New York.—p. 161.
Inflammation: I. Fixation of Vital Dyes in Inflamed Areas. V. Menkin, Philadelphia.—p. 171.
Persistence of Living Cells in Maitland's Medium for Cultivation of Vaccine Virus. T. M. Rivers, E. Haagen and R. S. Muckenfuss, Baltimore.—p. 181.
Tissue Maintenance: I. Changes with Diminished Blood Bulk. P. Rous and H. P. Gilding, Baltimore.—p. 189.
Id.: II. Service to Liver and Digestive Tract After Hemorrhage. H. P. Gilding, Baltimore.—p. 213.
Effect of Unilateral Nephrectomy on Total Number of Open Glomeruli in Rabbit. R. A. Moore and G. F. Lukianoff, Cleveland.—p. 227.
*Pneumonia in Rural Area in Southern Alabama. W. G. Smillie and E. L. Caldwell, New York.—p. 233.
Dissociation of Hog Cholera Bacillus: I. Isolation and Differentiation of Dissociants. C. P. Li, Peiping, China.—p. 245.
Id.: II. Serologic Reactions, Virulence and Stability of Variant Forms. C. P. Li, Peiping, China.—p. 255.

Pneumonia in Rural Area in Southern Alabama.—Pneumococcus type IV of low virulence was the prevailing organism in fifty-eight cases of pneumonia studied by Smillie and Caldwell in southern Alabama. Fixed types of pneumococci were not common. Pneumonia was more prevalent in children from 5 to 15 years of age than in adults. As a rule, the disease had a mild course. Most of the patients gave a definite history of an acute cold antedating the attack of pneumonia by a period of from five to eight days. Exposure alone did not seem to predispose to pneumonia, but those with an acute cold who were exposed to chilling of the body surface frequently developed pneumonia. There were seven "family epidemics" of pneumonia. In each instance there was a family epidemic of colds antedating the pneumonia. The pneumococcus was found in large numbers in the nasopharynx of those suffering from colds as well as in the patients with pneumonia. The epidemiology of pneumonia in the pioneer days of American history has many points in common with the epidemiology of pneumonia in a rural isolated area in southern Alabama today. This suggests that the crowded conditions and frequent contacts of modern city life have built up a community resistance to avirulent strains of pneumococci.

Journal of Infectious Diseases, Chicago

45: 1-78 (July) 1929

Relationship of Schultz-Charlton Reaction and Serum Dilution. M. E. Wylie, Glasgow, Scotland.—p. 1.
Sedimentation Rate of Red Blood Corpuscles in Acute and Chronic Infections. M. E. Wylie, Glasgow, Scotland.—p. 6.
*Cytology and Microchemistry of Mycobacterium Tuberculosis. G. Knaysi, Ithaca, N. Y.—p. 13.
*Bacteriophage Treatment of Staphylococcus Infections. N. W. Larkum, Lansing, Mich.—p. 34.
Comparative Study of Bacillus Sordellii (Hall and Scott) and Clostridium Oedematoides (Meleney, Humphreys and Carp). I. C. Hall, M. R. Rymer and E. Jungherr, Bozeman, Mont.—p. 42.
Nature of Pin Point Colonies in Raw and Pasteurized Milk. M. M. Diehm, Philadelphia.—p. 61.
Protective Effect of Bacteriophage Against Simultaneous Injection of Colon Bacilli. J. E. Walker, New Brunswick, N. J.—p. 73.

Cytology and Microchemistry of Mycobacterium Tuberculosis.—Investigations made by Knaysi do not substantiate the assumption of a wax or fat sheath around the cell of the tubercle bacillus, nor of wax or fat granules inside the cell.

Bacteriophage Treatment of Staphylococcus Infections.—Clinical results are submitted by Larkum which indicate that bacteriophagic filtrates have been effective in the treatment and prevention of staphylococcic infections, and that they have failed to cause serious or even marked reactions. A comparison of the results of vaccine and bacteriophage treat-

ment in a small series of patients decidedly favors the latter. It is not the purpose of the author to show that bacteriophage can cure staphylococcus infections. It is his intention to present to physicians the experiences of various workers which show that there are possibilities in this field.

Journal of Lab. & Clin. Medicine, St. Louis

14: 907-1016 (July) 1929

*Bacteriologic Study of 567 Postmortem Examinations. H. F. Hunt, E. Barrow, L. Thompson and G. W. Waldron, Rochester, Minn.—p. 907.

Biologic Chemistry of Skin Diseases and Syphilis. C. N. Myers, New York.—p. 913.

*Effect of Coffee and Tea on Gastric Secretion. W. H. Gantt, U. S. S. Russia.—p. 917.

*Calcium Deposition in Tissues of Dogs and Mice by Aid of Parathormone. A. Learner, Chicago.—p. 921.

*Epinephrine Addiction in Bronchial Asthma. R. W. Lamson, Los Angeles.—p. 931.

*Elimination of Dyes by Uterine Mucosa. J. L. Meyer, Chicago.—p. 936.

*Leukocytosis Following Intracranial Operations. A. Kolodny, Iowa City.—p. 940.

Effect of Subcutaneously Injected Epinephrine in Normal Human Subjects. T. Koppanyi, Syracuse, N. Y.—p. 942.

Chemical Analyses of Medium Cultured in Large Amounts and in Small Amounts. I. F. MacLachlan, Toronto, Canada.—p. 945.

New Method for Counting Blood Platelets in Undiluted Citrated Plasma. S. Petri, Copenhagen, Denmark.—p. 950.

Rapid Method for Preparation of Fecal Digests Suitable for Use in Nitrogen and Mineral Analyses. G. Stearns, Iowa City.—p. 954.

New Method for Calculating Colorimetric Results. J. C. Baier, Baltimore.—p. 957.

Rapid and Convenient Method for Skin Testing with Pollens. J. P. Henry, Memphis, Tenn.—p. 959.

Microphotographic Tissue Reports. R. A. Kilduffe, Atlantic City, N. J.—p. 961.

Simple Differential Diagnostic Procedure in Diseases of Hematopoietic System. A. Weiss, New York.—p. 965.

Study of Myers-Wardell Method for Determination of Cholesterol. F. Krasnow and A. S. Rosen, New York.—p. 967.

Glycerin Preservation of Serologic Test Materials; Influence of Heat on Glycerinated Wassermann-Positive Serums. F. Perstein and H. R. Fishback, Chicago.—p. 969.

Simplified Portable Apparatus for Determination of Carbon Dioxide Capacity of Plasma. W. Z. Fradkin, New York.—p. 973.

Hints to Laboratory Technicians. A. E. Parsonnet and J. Dupuis, Newark, N. J.—p. 978.

Antigen for Kahn Test: III. Correction of Antigen. R. L. Kahn, G. Lubin and E. McDermott, Lansing, Mich.—p. 979.

Bacteriologic Study of 567 Postmortem Examinations.—The bacteriologic work done in this study was carried out by four persons working independently but consecutively. The percentage of positive postmortem blood cultures obtained by each worker was 31, 43.7, 24 and 20.7, respectively. In all but one case in which cultures of blood were positive, definite foci of infection were demonstrable. It was found that the number and type of cases in which infectious foci were definitely present was in marked relationship to the percentage of positive blood cultures. From a comparison of simultaneous cultures from the heart's blood, liver and spleen, it was concluded that the blood is a better indicator of terminal bacteremia than the liver or spleen. In all but one case of nonbacterial diseases, the cultures were entirely negative. From the uniformity of results, it is believed by Hunt et al. that postmortem bacteriology is reliable and, if carried out carefully and as a routine, often leads to the solution of the exact cause of death.

Effect of Coffee and Tea on Gastric Secretion.—The chemical action of a mixture of tea and bread on the stomach secretion was found by Gantt to be practically the same as that of a mixture of bread with an equal amount of water. A mixture of coffee and bread produced a slightly greater amount of gastric juice during the first two hours. The latent period (the beginning of the secretion) was not affected in either case. The increase in juice was very little: 0.3 cc. for the first hour in the stomach pouch, or about 3.0 cc. for the whole stomach. The nervous element was eliminated by introducing the mixture through a gastric fistula, and the collection of the juice was from a miniature Pavlov stomach. It is concluded that the effect of even very strong coffee and tea on the stomach secretion depends almost entirely on the individual; i. e., on the nervous secretion, and on the water content, there being little or no chemical influence due to the tea and coffee per se.

Calcium Deposition in Tissues of Dogs and Mice by Aid of Parathyroid Extract-Collip.—A histologic study made by Learner of the experimental calcification produced in dogs by injections of parathyroid extract-Collip gave the following results: In the kidneys, the calcium is found in the Bowman space of the glomeruli, in the lumens of the tubuli and, to a lesser degree, in the tubular epithelium. Some also is present in the wall of the smaller arteries. In the liver, calcium is deposited in the form of granules in the liver cells of the central portions of the acini and also in the Kupffer cells. In the lungs, calcium is observed in the wall of the bronchi below the epithelium and in the alveolar septums. In the heart, the calcification involves chiefly the interstitial tissue between the muscle fibers, while much less is found inside the muscle fibers. In the intestine, calcium can be detected in the connective tissue about the basal portions of the glands. Some of the delomorphic cells of the stomach are seen filled with calcium. These microscopic observations are explained on the basis of a fluctuation of the reaction, with alteration in the solubility for calcium, or as the result of a simple overloading with calcium. Mice injected with large amounts of parathyroid extract-Collip show only an increase of the physiologic calcification of their bronchial cartilage. The otherwise negative histologic observations are in accord with the great resistance of these animals to parathyroid extracts.

Epinephrine Addiction in Bronchial Asthma.—Lamson reports three cases to show that the asthmatic patient may develop an epinephrine habit of taking large amounts of the drug at frequent intervals, even though he professes to obtain little relief from the drug. The periodicity of injection is often striking. It is a common experience that relatively small doses will be effective when given by the physician, but larger ones administered by the patient or family will fail to give relief. The misuse of epinephrine is often due to the faulty instruction given by the physician who first advises the "self-medication." The pharmacologic axiom that one should adjust the dosage so as to obtain the maximum therapeutic effect and the minimum toxic response with a minimum of the drug seems to be disregarded in many instances. In the chronically ill patient who may require a certain drug over a period of years, it behooves the physician to titrate the drug against the patient instead of determining the dosage by a fixed rule. Many times the initial dose of epinephrine recommended is from 10 to 12 or even 15 minims (0.6, 0.7 or 0.9 cc.). Some of these patients might be completely relieved by from 2 to 4 minims (0.12 to 0.24 cc.), and perhaps would not need to have this increased for six months or a year. Any marked increase should be only on the advice of the physician. The substitution of another drug for a short time and then a return to epinephrine will frequently defer the increase in dosage for another long period.

Elimination of Dyes by Uterine Mucosa.—To determine whether there might be a rational basis for systemic chemotherapy of local female genital infections, Meyer undertook the problem of determining whether the uterine mucosa would eliminate antiseptic dyes which were injected into the blood stream. The experiments were performed on dogs. The presence of the dye was determined by the appearance of the mucosa after removal of the uterus. Mercurochrome, pyridium and acriflavine when injected intravenously gave a distinct color to the uterine mucosa. The result with gentian violet was questionable. Methylene blue (methylthionine chloride, U. S. P.) did not color the mucosa. It was impossible to determine whether the dye was in the uterine secretion, because of its scantiness in the nonpregnant state and because of its discoloration in the postpartum state. The physiologic state of the endometrium did not influence the elimination of the dye. These observations suggest that there is a rational basis for the study of systemic chemotherapy of local disease of the female genital tract.

Leukocytosis Following Intracranial Operations.—Kolodny asserts that craniotomies associated with intradural hemorrhage provoke a high leukocytosis. The degree of leukocytic increase is not proportionate to the amount of bleeding but depends on whether or not the bleeding occurred intradurally or extradurally. When bleeding takes place into a ventricle, the leukocytosis is higher and of longer duration. The leukocytosis seen in craniotomies without opening of the dura is slight, and the leukocytes return to normal in about thirty-six hours after the operation. To depend on the differ-

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ential count for a distinction between an infectious and a non-infectious leukocytosis in intracranial operations is erroneous. Postoperative leukocytosis, when the dura is opened or the ventricle entered, usually shows a differential shift toward the polymorphonuclears.

Journal of Preventive Medicine, Baltimore

3: 279-342 (July) 1929

Epidemiology of Paratyphoid Infections. E. O. Jordan, Chicago.—p. 279.
*Schick Test in Palestine, a Country of Low Diphtheria Prevalence. M. Mann and I. J. Kligler, Jerusalem, Palestine.—p. 309.
*Outbreak of Botulism Due to Home-Canned String Beans. W. E. Cary and S. A. Koser, Chicago, and V. S. Laughlin, Westfield, N. Y.—p. 317.
*Identity of Human Leprosy and Rat Leprosy. E. L. Walker and M. A. Sweeney, San Francisco.—p. 325.
Factors Involved in Effective Typhoid Carrier Survey. L. C. Havens and C. Ridgway, Montgomery, Ala.—p. 335.

Schick Test in Palestine.—From about 3,000 Schick tests made by Mann and Kligler, it appears that the percentage of diphtheria immunity at ages above 8 in Palestine is the same as that found by Zingher in New York, but that the immunization starts earlier among the Palestine children than in the New York children. A comparison of the native and foreign-born groups on the one hand, and the Ashkenazic and Sephardic communities on the other, indicates that the native-born, especially in the Sephardic community, develop immunity to diphtheria much earlier than the foreign-born children. It would seem that the absence of diphtheria in Palestine is only apparent. Since active immunity can probably be acquired only as the result of infection, the infection rate in the early age groups must be relatively high to produce so large a number of immune persons.

Botulism Due to Home-Canned String Beans.—An outbreak of botulism at Westfield, N. Y., resulting in ten cases and five deaths, was evidently due to home-canned yellow string beans. *Clostridium botulinum*, type B, was isolated by Cary et al. from the empty jar which had contained the beans. Another product from the same household, home-canned egg plant, was found to be lightly seeded with *Clostridium botulinum*, type B, though the food itself was nontoxic.

Identity of Human Leprosy and Rat Leprosy.—Walker and Sweeney review their studies on human and rat leprosy and stress the fact that the identity of the two leprosies provides an experimental animal for the study of the human disease, of which the lack has hitherto constituted an insurmountable barrier to experimental investigation.

Laryngoscope, St. Louis

39: 421-484 (July) 1929

Inner Ear and Cerebellar Changes in Pathologic Fetal Position: Significance for Static Disturbances in Earliest Periods of Life and for Anomalies of Speech. A. Precechtel, Prague.—p. 421.
Sigmoid Sinus Thrombosis. G. B. Trible, Washington, D. C.—p. 444.
Use of Ayer's Spinal Manometer in Two Cases of Bilateral Acute Mastoiditis, Complicated by Lateral Venous Sinus Phlebitis. G. O. Cummings, Portland, Me.—p. 455.
Nasopharyngeal Fibroma Treated by Operation and Followed by Radium: Two Cases. A. H. Persky, Philadelphia.—p. 460.
Implantation of Radium Seeds in Malignancy of Mouth, Nose and Esophagus. F. R. Herriman, New York.—p. 467.
Recurring Stricture of Esophagus Due to Epidermidolysis Corrosa. P. S. Stout, Philadelphia.—p. 470.

Medical J. & Record, New York

130: 121-180 (Aug. 7) 1929

Lesson of Milk Borne Epidemics. A. L. Forster, Chicago.—p. 121.
*Effect of Cholesterol (Lanolin) Inunctions and Ultraviolet Light in Clinical Syndrome of Probable Endocrine Origin Accompanied by Deficiency of Cholesterol and Phosphate in Blood. L. Berman, New York.—p. 123.
Effect of Chromium Poisoning on Nose and Throat: Case. W. W. Carter, New York.—p. 125.
Diabetes. W. H. Porter, New York.—p. 127.
Pelvic Inflammation and Modern Treatment. H. Wilderman, Philadelphia.—p. 130.
Causes and Treatment of Low Back Pain. S. Kleinberg, New York.—p. 133.
William Edward Hickman. P. E. Bowers, Los Angeles.—p. 139.
Effect of Protein Diet on Constitution and Development of Infants. I. A. Abt, Chicago.—p. 143.
Milk Allergy in Infants. H. Hallarman, New York.—p. 147.
Malnutrition in Children. H. H. Perlman, Philadelphia.—p. 148.
Use of Lactic Acid Milk in Feeding Premature Infants. M. Gleich, New York.—p. 153.
Acute Pancreatitis in Children. M. Weintrob and M. H. Geshwind, New York.—p. 154.
Microcephaly in Twins. E. A. Whitney, Elwyn, Pa.—p. 158.
New Proctoscope. R. V. Gorsch, New York.—p. 159.
New Needle Guard for Spinal Punctures. E. L. Stern, New York.—p. 159.
Operation on Prostate. J. M. White, Montgomery, Ala.—p. 160.

Cholesterol Inunctions in Syndrome of Probable Endocrine Origin.—A clinical syndrome is described by Berman of neuromuscular asthenia with predominantly anorexia and muscular weakness, accompanied by a definite deficiency in the cholesterol and a less definite deficiency in the inorganic phosphate content of the blood. There was no evidence of cardiac, circulatory, renal or central nervous system disease. Only treatment with wool fat inunctions followed by the application of ultraviolet rays was able to bring about a marked increase in the cholesterol and inorganic phosphate of the blood, and a definite amelioration of the symptoms.

Military Surgeon, Washington, D. C.

65: 171-338 (Aug.) 1929

Objective Method of Classifying Army Officers. B. F. Duckwall.—p. 171.
Intensity of Positive Wassermann as Guide to Treatment. E. B. Vedder.—p. 195.
Ruptured Aneurysm: Femoral and Gluteal Operation and Recovery. L. H. Williams.—p. 206.
Tribulations of Medical Corps of French Army from Origin to Our Own Time. Inspector General Sieur.—p. 210.
Hodgkin's Disease of Mediastinum with Invasion of Lungs: Case. H. L. Kraft.—p. 229.
Malfunctions of Thyroid Gland in Relation to Aviation. A. M. Brailsford.—p. 234.
Hematuria in Benign Prostatic Hypertrophy. L. P. Wershub.—p. 241.

Missouri State M. Assoc. Journal, Fulton

26: 371-426 (Aug.) 1929

Medicine an Art. F. I. Ridge, Kansas City.—p. 371.
Psychoneuroses: What General Practitioner Should Know and Do. P. Bassoe, Chicago.—p. 372.
Preventive Medicine, Past, Present and Future. J. H. J. Upham, Columbus, Ohio.—p. 379.
Neurologic Sequelae of Infectious Diseases. E. T. Gibson, Kansas City.—p. 383.
*Sequelae of Acute Epidemic Encephalitis. G. W. Robinson, Kansas City.—p. 385.
Modern Methods of Treatment in Neurosyphilis. A. D. Carr, St. Louis.—p. 391.
Physiologic Method of Treatment of Accidental Wounds. W. R. Hewitt, St. Louis.—p. 395.
Symmetrical Thinness of Parietal Bones. S. Moore, St. Louis.—p. 396.
Oxycephaly: Four Cases. A. D. Carr, St. Louis.—p. 398.

Sequelae of Acute Epidemic Encephalitis.—In the treatment of the sequelae of encephalitis, Robinson uses sodium salicylate and sodium iodide intravenously, 15½ grains (1 Gm.) each daily, or every other day. He gives sodium cacodylate or neoarsphenamine, subcutaneously or intravenously; 50 per cent dextrose intravenously, 20 cc., every second day; tincture of nux vomica, 10 to 15 minims (0.6 to 0.9 cc.) three times daily, and scopolamine, 1/200 to 1/50 grain (0.2 to 1.3 mg.), daily, which will give some relief in the parkinsonian cases. In some cases antityphoid inoculation is helpful.

New York State J. Medicine, New York

29: 919-985 (Aug. 1) 1929

*Tuberculosis and Asthma in Children. H. A. Reisman, Jamaica, N. Y., and R. L. Mason, New York.—p. 919.
*Perforated Duodenal Ulcer in Case of Pemphigus. O. L. Levin, New York.—p. 925.
Urticaria: Search for Underlying Agent. R. H. Rulison and J. V. Lichtenstein, New York.—p. 929.
After-Care of Influenza Cases. A. W. Ferris, Watkins Glen, N. Y.—p. 932.
Studies in Urticaria. A. Walzer, New York.—p. 933.
Treatment of Placenta Praevia. H. C. Williamson, New York.—p. 936.
Treatment of Psychoneurotics and Borderline Mental States. D. C. Wilson, Clifton Springs, N. Y.—p. 938.
*Lupus Erythematosus Treated with Gold and Sodium Thiosulphate. H. C. Saunders, New York.—p. 942.
Cisternal (Suboccipital) Puncture. L. Spiegal, New York.—p. 945.

Tuberculosis and Asthma in Children.—The intradermal tuberculin test (1:1,000) was performed by Reisman and Mason in 158 consecutive cases of asthma in children varying in age from 8 months to 14 years. Sixty-one (38.6 per cent) gave a positive tuberculin test. Of the nonasthmatic children examined, 16.9 per cent reacted positively.

Perforated Duodenal Ulcer in Pemphigus.—Levin reports a typical case of pemphigus, in which the lesions first appeared in the mouth, and which was followed rapidly by a generalized bullous eruption. The cutaneous reaction was unusually intense, the bullae were enormous, and widely disseminated, and resulted in large denuded areas. This was accompanied by clinical evidences of a severe toxemia. For five days the patient complained of indefinite gastro-intestinal symptoms and death occurred from a perforated duodenal ulcer.

Lupus Erythematosus Treated with Gold and Sodium Thiosulphate.—Thirty-two patients were treated by Saunders with gold and sodium thiosulphate. The duration of the disease varied from seven months to eighteen years. Thirty were cases of the discoid type, one was discoid and disseminated combined, and one was of the seborrhea-like variety. In all cases, some portion of the face was involved. In seven the mucous membrane was affected. Eleven showed scalp lesions and two, patches on the body and extremities. In the twenty-six cases in which treatment was continued sufficiently long to allow one to draw conclusions, the greatest number of doses given was seventy-six and the smallest two, the average being twenty. The largest amount of the chemical used was 6,500 mg., the smallest 150 mg. Of the patients treated, fifteen were clinically cured, four were almost cured, six were improved and one was not as well as when treatment was instituted. Six discontinued treatment before results could reasonably be expected.

Oklahoma State M. Assoc. Journal, Muskogee

22: 247-282 (July) 1929

Intracranial Hemorrhage in New-Born. C. H. Hall, Oklahoma City.—p. 247.
Underweight Child. F. A. Harrison, Ardmore.—p. 248.
Scientific Achievements of Army Medical Corps. R. E. Scott, Fort Sam Houston, Texas.—p. 252.
Complement Fixation Test for Pellagra. T. C. Terrell and D. R. Venable, Fort Worth, Texas.—p. 255.
Malarial Treatment of General Paralysis. F. M. Adams, Vinita.—p. 260.
Neuropsychiatry and Industrial Compensation. A. D. Young, Oklahoma City.—p. 262.
Clinical Significance of Purpura. L. D. Thompson, St. Louis.—p. 264.
Physicochemical Interpretation of Cancer. E. C. Mason, Oklahoma City.—p. 266.
Tuberculosis of Thyroid Gland. S. W. Budd and C. Williams, Richmond, Va.—p. 268.

Physical Therapeutics, New York

47: 419-474 (Aug.) 1929

Biologic Action of Radiant Energy: I. Ultraviolet A. E. R. Whitmore, Washington, D. C.—p. 419.
Diathermy in Gynecology. W. H. Guillium, Asbury Park, N. J.—p. 436.
Seminal Vesiculitis: Treatment by Diathermy. W. S. Pugh, New York.—p. 447.

Radiology, Saint Paul

13: 95-190 (Aug.) 1929

Importance of Filtration and Superiority of Pure Gamma Radiation in Radiotherapy of Malignant Tumors. A. LaCassagne, Paris, France.—p. 95.
*Effect of Roentgen Rays on Gallbladder: Experimental Roentgen-Ray Cholecystitis. J. Brams and L. Darnbacher, Chicago.—p. 103.
Radiation and Uses in Treatment of Urologic Neoplasms. C. A. Waters, Baltimore.—p. 109.
Bone Tumors. J. N. Sisk, Madison, Wis.—p. 115.
Status Roentgenologiae. G. Holzknecht, Vienna.—p. 124.
*Dynamics of Histogenesis: XIV. E. J. Carey, Milwaukee.—p. 127.
Radium in Treatment of Nevi. Z. A. Johnston, Pittsburgh.—p. 169.

Effect of Roentgen Rays on Gallbladder.—A definite acute and chronic cholecystitis was experimentally produced by Brams and Darnbacher in a series of dogs with dosages of roentgen rays that were within the range of those used for therapeutic purposes. The changes produced are destructive. They consist of hemorrhage, inflammatory edema, round cell infiltration, fibrous tissue hyperplasia and, in some instances, necrosis of the epithelium, and resemble the type of cholecystitis produced by chemical means. Basing an opinion on the relative lack of injury to the exposed portion of the duodenal and pyloric mucosa, the authors believe that the gallbladder epithelium is comparatively more sensitive to roentgen-ray exposure than the other organs in apposition to it. The possibility of injury to the gallbladder following deep therapy in the region of the right upper quadrant of the abdomen must be borne in mind.

Dynamics of Histogenesis.—The main points made by Carey are that the structure of cancelous bone is determined by the capacity for movement in the chief plane or planes of action at the related joint; the structure of cancelous bone related to monaxial, biaxial and triaxial joints is characteristic and definite for each type of joint; the pattern of cancelous bone is the product of the remittent back pressure vectors of muscle action in joint range of mobilization and not the product of the immobile static load of body weight; skeletal bone is the product of an adequate pressure of differential growth, as well as adequate pressure of myogenic function; tension, although transmitted by bone, is not a trophic stimulus to bone origin; by local muscular excision there is a focal atrophy of corresponding cancelous bone trabeculae; prior to birth there is a growth relativity leading to a mutual antagonism between the length growth of the femur and the back pressure of the developing thigh musculature which results in a relative decrease of femoral volume and length, and corresponding to thigh muscular development, an increase of femoral density or consolidation and weight. The clinical significance of this study reveals the rôle of action as well as the reciprocal dependence of the muscular and skeletal tissues as mutual maintainers of each other's normal structural integrity and the logical use of a timed early mobilization after rest in the treatment of derangements of the locomotor apparatus, such as fractures and dislocations.

South Carolina M. Assoc. Journal, Greenville

25: 457-480 (July) 1929

A Plan To Keep Well. F. M. Routh, Columbia.—p. 459.
Diagnosis and Treatment of Fractures of Skull: 419 Cases. E. T. Newell, Chattanooga, Tenn.—p. 461.
Tuberculosis of Stomach: Case. G. T. Tyler, Jr., Greenville.—p. 465.

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An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Surgery, Bristol

17: 1-116 (July) 1929

Epoch Making Books in British Surgery: IX. Works of Percivall Pott. D. Power.—p. 1.
*Congenital Diverticula of Intestine: Case Exhibiting Heterotopia. H. Edwards.—p. 7.
*Fractures of Pelvis: 100 Cases. C. P. G. Wakeley.—p. 22.
Incision for Direct Exposure of Whole Humerus. G. A. Mason.—p. 30.
Developmental Enterogenous Cysts and Diverticula. A. Evans.—p. 34.
*Hemangiomatous Cysts of Cerebellum: Eight Cases. P. Sargent and J. G. Greenfield.—p. 84.
Surgical Technic of Pulmonary Abscess. A. T. Edwards.—p. 102.
Duodenal Ulcers Following Burns: Two Cases. J. J. Levin.—p. 110.
Treatment of Congenital Defects of Bladder and Urethra by Implantation of Ureters into Bowel: Seventeen Cases. G. G. Turner.—p. 114.
Hematuria Arising from One Segment of Double Kidney Treated by Resection: Case. A. Jacobs.—p. 179.
Congenital Diverticulum of Stomach in Infant. N. Sinclair.—p. 182.
Osteomyelitis of Spinous Process of Dorsal Vertebra. S. J. Hartfall and L. B. Heseltine.—p. 184.

Congenital Diverticula of Intestine.—A case of congenital diverticulum of the small intestine is described by Edwards which caused symptoms from infancy and eventually perforated through a chronic ulcer. The diverticulum was removed at operation, with recovery. The mucous membrane of the diverticulum contains a layer of gastric mucosa, thus exhibiting the phenomenon of heterotopia.

Fractures of Pelvis.—In this series of 100 cases of fracture of the pelvis analyzed by Wakeley, there were visceral complications in only eleven. There was no case of injury to the rectum. There was no case of injury to the sacral nerves at the time of the accident and only one at a later date due to compression from excessive callus formation.

Hemangiomatous Cysts of Cerebellum.—Eight cases are reported by Sargent and Greenfield. The majority of cerebellar cysts have capillary hemangiomas in their walls. These angiomas are always embedded in the cortex of the cerebellum, and frequently lie in a small dimple in the wall of the cyst. Angiomatous cysts of the cerebellum frequently coexist with retinal angiomas, hypernephromas or cystic disease of the kidneys or pancreas. Cerebellar cysts of this kind may have a familial incidence, occurring in members either of the same or of suc-

cessive generations. A close relationship to a trauma of the head or a severe fall has been established in several cases. It is probable that the trauma may start the formation of a cyst in a patient who already has an angioma of the cerebellum. Angiomatous cysts have no lining membrane. Their walls are formed by a condensation of the normal neuroglia. Simple emptying of such a cyst rarely brings about a permanent cure. Removal of the tumor from the wall of the cyst seems, however, to prevent the recurrence of symptoms.

British Medical Journal, London

2: 131-172 (July 27) 1929

Debt of Modern Surgery to Ancillary Sciences. A. H. Burgess.—p. 131.
*Physiology Basis of Treatment. W. E. Dixon.—p. 138.
*Traumatic Rupture of Stomach. F. H. Scotson.—p. 144.
Toxic Jaundice with Ascites. E. Bulmer.—p. 144.
*Dick Test in Pregnancy. M. Salmond and B. Turner.—p. 145.
Full-Term Ectopic Pregnancy. A. E. O'Donnell and T. A. Ogilvie.—p. 146.
Paraphimosis of Clitoris. K. S. M. Brown.—p. 146.

Physiology Basis of Treatment.—Dixon states that all precise knowledge in therapeutics is based on controlled experiments on animals or in man, and that the elucidation of the action of medicaments by the methods and data of experimental physiology is one of the most important steps taken to place medicine on a scientific basis. How important this is may be gaged from the fact that all fundamental advances in treatment in the last thirty years have originated, directly or indirectly, from experiments on animals. There can be no doubt, then, that the future of therapeutics, and therefore of medicine as a whole, is intimately connected with physiology; there can be no doubt that advance in the practice of medicine is dependent on those trained in the methods and fundamental truths of physiology, who devote themselves in the ward and biologic laboratory to investigating how best to prevent or cure disease, and so relieve suffering.

Traumatic Rupture of Stomach.—Both the cases cited by Scotson were caused by injuries when the stomach was full, and in both operation was performed within eight hours of the accident. In one case the upper part of the lesser curvature of the stomach was affected, and in the other the pyloric portion. In neither case were there any other abdominal injuries. The immediate after-treatment was similar to that employed in the case of rupture of a gastric or duodenal ulcer.

Dick Test in Pregnancy.—Salmond and Turner endeavored to ascertain whether there is any agreement between the reaction of pregnant women to the Dick test and their liability to puerperal sepsis. Five hundred and thirty-three women were tested. Seventy per cent were negative. Of 158 Dick-positive reactors, 20 per cent, and of 373 Dick-negative reactors, 15 per cent, became febrile. No attempt was made to decide whether the febrile condition was due to hemolytic streptococci or not. There was no significant difference between the liability of the Dick-positive and Dick-negative pregnant women to "fever" in the puerperium.

Journal of Neurol. & Psychopathology, London

10: 1-96 (July) 1929

Tumor of Brain Associated with Diffuse Softening and Turbid Cerebrospinal Fluid: Case. H. L. Parker, Rochester, Minn.—p. 1.
Personality and Psychosis: Study in Schizophrenia. W. McC. Harrowes.—p. 14.
Dementia Paralytica: Therapeutic Measures and Results. A. Pool.—p. 21.
Postmeningitic Blindness, Deafness, Hypogenitalism and Hypopituitarism. W. M. Kraus and S. B. Wortis, New York.—p. 33.
Encephalitis and Specific Fevers. S. A. K. Wilson.—p. 36.

Lancet, London

2: 209-260 (Aug. 3) 1929

Dermatology. N. Walker.—p. 209.
Renal Glycosuria. A. M. Crawford.—p. 214.
*Selective Action of Roentgen Rays on Blood Cells of Cat. S. Wright and H. A. Bulman.—p. 217.
Colorimetric Estimation of Vitamin A. T. Moore.—p. 219.
*Unusual Case of Urinary Fistula. A. C. Turner.—p. 220.

Selective Action of Roentgen Rays on Blood Cells of Cat.—The doses of irradiation employed by Wright and Bulman were definitely less than the lethal dose for Jensen's rat sarcoma cells. The more important change observed was that the lymphocytes decrease early and markedly. The polymorphonuclear leukocytes, after an inconstant initial increase, decrease more slowly and sometimes to a smaller extent. Marked changes in the red cell count occur later still: (*a*) in fatal cases, an acute anemia develops in the final stages associated with evidence of hemolysis or the presence of widespread hemorrhages; (*b*) in nonfatal cases the anemia develops very slowly and recovery is similarly gradual. The blood platelets are apparently unaffected in the cases that have ended fatally within a short time of irradiation, even when there is evidence of infection. In patients who survive, the platelet count declines parallel with the fall in the red count, and then shows a gradual recovery.

Urinary Fistula.—The discharging sinus in Turner's case was situated in Scarpa's triangle, immediately below the center of Poupart's ligament, and had an orifice large enough to admit a number 10 catheter. A probe passed without meeting any obstruction, running upward and backward for a distance of 5 inches. The vertebral column and hip joint appeared normal. In the region of the left kidney there was a slight fulness. The urine contained large quantities of pus. Roentgen and cystoscopic examinations showed the presence of renal calculi in the left kidney. A catheter in the left ureter was arrested at the brim of the pelvis. An opaque injection into the fistula, having reached the kidney, descended the ureter to a point a short distance proximal to the tip of the catheter, but in a more medial plane. A further radiogram showed a later condition in which the opaque emulsion, having traversed the S shaped course taken by the ureter, was draining down the ureter alongside the catheter. The left kidney was explored by the usual approach. It was found fibrosed, half the normal size, and densely adherent to the surrounding structures. Numerous calculi could be felt. Owing to the adhesions to peritoneum and viscera, a nephrectomy was impossible. As decapsulation also proved unsuccessful, the kidney was split from pole to pole, and six calculi were removed. A thick fibrous cord was felt joining the pelvis of the kidney at the junction of the inferior calix, and on removal of a calculus from this calix a large quantity of pus welled up. No normal tissue could be demonstrated in the kidney, which was left open and drained. Two months after operation the sinus had closed and the nephrotomy wound had healed, and when the patient was discharged he had no symptoms and had gained weight.

Quarterly J. of Medicine, London

2: 557-652 (July) 1929

Suprarenal Virilism: Two Cases. A. D. Fordyce.—p. 557.
*Familial Polycystic Disease of Kidneys. C. J. Fuller.—p. 567.
Variation of Free Hydrochloric Acid and Total Chloride in Upper and Lower Parts of Stomach. R. J. Duthie.—p. 575.
*Acidemia and Alkalemia in Diarrhea and Vomiting of Infants. M. Maizels and C. B. McArthur.—p. 581.
Visceroptosis and Allied Abdominal Conditions Associated with Chronic Invalidism. H. Bedingfield.—p. 611.

Familial Polycystic Disease of Kidneys.—Fuller's cases occurred in four generations in succession of a single family and affected nine out of a total of twenty-seven individuals.

Acidemia and Alkalemia in Diarrhea and Vomiting of Infants.—Maizels and McArthur conclude that in most cases of infantile diarrhea and vomiting an acidemia is present, but in some an alkalemia may be found. In the latter the reduction in the osmotic pressure of the blood is often so great that a retention of base occurs, leading to the excretion of an acid urine. If the urine is neutral or alkaline, or the ammonia coefficient is below 8 per cent, or the ammonia combined acid is less than twice as great as the titratable acid, then acidosis is probably absent. In these circumstances, if chloride is persistently absent from urines of average concentration, it is probably advantageous to give extra sodium chloride by mouth or by some other route, and it is probably unsafe to administer alkali. If the urine is acid and the ammonia coefficient is above 8 per cent and the ratio of ammonia combined acid to titratable acid is greater than 2.5, acidosis is not necessarily present, and the bicarbonate reserve of the blood may even be increased. The prognosis of a case cannot be gaged from the level of the plasma bicarbonate. Certain patients with great depletion of the alkali reserve of the blood rapidly improved, while, on the other hand, the plasma bicarbonate was only moderately lowered in some cases of the utmost severity.

Annales de Médecine, Paris

25: 423-517 (May) 1929

Significance of Organic Lesions and Functional Syndromes. L. Bard.—p. 423.
*Immunologic Researches on Whooping Cough. R. Debré, J. Marie and H. Prétet.—p. 434.
*Treatment of Gangrene of Lung. A. Landau and J. Held.—p. 441.
*Rigidity in Lesions of Olivary Bodies. G. Guillain, P. Mathieu and I. Bertrand.—p. 460.
*Adams-Stokes Syndrome. E. Géraudel and A. Valensi.—p. 472.

Immunologic Researches on Whooping Cough.—Debré et al. obtained colonies of pertussis bacilli by cultivating the droplets expelled during coughing by patients with whooping cough. In this manner they isolated and cultivated a large number of strains of pertussis bacilli. They then attempted to determine whether or not these Parisian strains belonged to the same type. Their results were as follows: 1. None of the bacilli were agglutinated by the experimental serum A; bacilli of the control culture, on the contrary, were agglutinated by this serum at a concentration of 1:1,000. 2. The bacilli of all of the strains were agglutinated with serum B, most of them at a concentration of the serum of 1:1,500 and 1:1,000. The bacilli of the control culture did not present traces of agglutination. 3. The bacilli of only five of the cultures were agglutinated by the therapeutic serum of Bordet-Gengou. 4. The agglutinating serums agglutinated bacilli of all the strains at concentrations varying from 1:500 to 1:4,000. Only bacilli of the control culture were not agglutinated. This study of the strains of pertussis bacilli demonstrated the homogeneous nature of the pertussis bacillus at Paris.

Treatment of Gangrene of Lung.—During the past five years Landau and Held have treated twenty-seven patients with gangrene of the lung. On the basis of their observations they have established the following therapeutic rule: Gangrene of the upper lobe of the lung is an absolute indication for the earliest possible establishment of an artificial pneumothorax; in gangrene of the lower lobe, on the contrary, neoarsphenamine is indicated.

Rigidity in Lesions of Olivary Bodies.—From the study of a case of parkinsonian rigidity in which the postmortem examination revealed a vascular lesion of the left olivary body with secondary atrophy of the right olivary body, Guillain et al. draw the following conclusions: 1. Rigidity (hypertonia of the parkinsonian type) may occur in cases in which there are no important lesions of the motor cells of the pallidum and of the corpus striatum. 2. Lesions of the olivary bodies of the medulla oblongata are capable of producing the phenomena of generalized rigidity, catatonia, bradykinesia and perhaps certain tremors resembling those observed in the parkinsonian syndromes. 3. The olivary bodies play a rôle in the tonic reflex actions that regulate and assure the automatism of the vertical position.

Adams-Stokes Syndrome.—Géraudel and Valensi report a case of Adams-Stokes syndrome in a man, aged 75, in which postmortem examination revealed a transverse lesion of the auriculoventricular bundle and obliterative endarteritis of its artery.

Archives des Maladies de l'App. Digestif, etc., Paris

19: 541-676 (May) 1929

*Inflammatory Choledochitis. J. Charrier and M. Thalheimer.—p. 541.
Urea and Ammonia Contents of Gastric Juice. D. Simici, R. Vladesco and M. Popesco.—p. 576.
*Digestion of Fats and Proteins Following Resection of Stomach. J. Gavrila and J. Danicico.—p. 587.
Mechanism of Syndrome of Duodenal Ulcer. S. Mintz.—p. 591.

Treatment of Inflammatory Choledochitis.—From a personal study of two cases of inflammatory choledochitis and a review of the medical literature on this subject, Charrier and Thalheimer conclude that aside from advanced cases of fibrous stenosis, one may hope to conserve the choledochus and to obtain, by temporary diversion of the bile, the retrogression of the inflammatory phenomena and the return to permeability of the duct. The choledochus becomes permeable again and permanent recoveries are frequent; early intervention seems to prevent the development of the stage of permanent stricture. The most commonly used methods of treating stenosis of the choledochus are the following: (1) external or temporary diversion of the bile; (2) internal diversion of the bile or permanent anastomosis between the bile tract and the intestine, and (3) direct operations on the choledochus (dilation and longitudinal section of the choledochus and reconstruction of the bile tract).

Digestion of Fats and Proteins Following Resection of Stomach.—In a study of the digestion of fats and proteins in thirteen patients in whom resection of the stomach had been performed, Gavrila and Danicico found that the digestion of fats was impaired in all the patients whereas the digestion of protein was impaired in only eight of the thirteen patients. The authors believe that this digestive insufficiency is the result of a pancreatic insufficiency following resection of the stomach; in the digestive insufficiency hepatic insufficiency must also play a rôle because occasionally the digestion of proteins is normal and the digestion of fats is much impaired. The passage through the intestine also seems to play a rôle in the digestive deficit because in nearly all cases of resection of the stomach this passage is greatly accelerated, ingested powdered charcoal appearing after twelve hours.

Archives des Maladies du Cœur, etc., Paris

22: 289-368 (May) 1929

Regulation of Arterial Tension in Disease. L. Bard.—p. 289.
*Complete Heart Block with Auricular Fibrillation. B. Solomjany and M. Boukspan.—p. 305.
*Auricular Flutter with 2:1 Rhythm. R. Lutembacher.—p. 309.
*Large Aneurysm of Ascending Aorta. E. Bordet and J. Lereboullet.—p. 314.

Complete Heart Block with Auricular Fibrillation.—Solomjany and Boukspan report a case of complete heart block with auricular fibrillation in a man, aged 65, who complained of difficulty in breathing and dizziness. In consideration of the age of the patient, the absence of a history or of objective signs of syphilis and the presence of a generalized arteriosclerosis, the authors believe that in this case the anomaly of rhythm was caused by pathologic changes in the auriculoventricular bundle.

Permanent Form of Auricular Flutter with 2:1 Rhythm.—Lutembacher reports a case of auricular flutter with 2:1 rhythm that began twelve years previously in a robust youth, aged 18, following a bicycle ride. At that time the pulse rate was found to be regular and 150 a minute. In a short time the tachycardia ceased to inconvenience the patient. The acceleration of the heart persisted, however, and the patient came to the author for examination. Auscultation did not reveal any abnormality aside from the regular acceleration of the rhythm. The arterial tension was normal. On roentgen examination the diameters of the heart were not found to be enlarged. No qualitative modification of the cardio-aortic shadow was noted. The reflexes were normal and the various organs were in excellent condition. Despite the tachycardia the patient followed his occupation; he did not present dyspnea even after climbing stairs. The electrocardiogram showed a regular auricular tachycardia of 300 with a regular ventricular rhythm of 150.

Large Aneurysm of Ascending Aorta.—Bordet and Lereboullet report a case of large aneurysm of the ascending aorta which on roentgen examination simulated a dilatation of the pulmonary artery. At necropsy a large aneurysm was found, taking origin from the anterior wall of the aorta 1 cm. above the aortic valve and compressing the pulmonary artery.

Journal d'Urologie Médicale et Chirurgicale, Paris

27: 369-464 (May) 1929

*Functional Results of Suture of Ureter. H. Marion.—p. 369.
Diagnostic Value of Pneumopyelography. J. Bedrna and J. Simon.—p. 392.
Phenolsulphonphthalein Test in Diagnosis of Tuberculosis of Kidney. H. Blanc.—p. 401.

Functional Results of Suture of Ureter.—From a study of ureteral suture in dogs, Marion concludes that the functional results of ureterorrhaphy are poor. Although this operation is easily performed from the anatomic point of view, it is unsatisfactory because it is eventually followed by dilatation or atrophy of the kidney. The unsatisfactory results of ureterorrhaphy are not caused by cicatricial narrowing of the ureter at the point of suture but by the incoordination between the movements of

the upper and lower segments of the organ. The author emphasizes the fact that although a divided and sutured ureter may occasionally assure an appreciable functioning of the kidney for a long time, it inevitably becomes functionless.

Presse Médicale, Paris

37: 829-844 (June 26) 1929

*Nosology of Parrot's Pseudoparalysis. M. Péhu and A. Mestrallet.—p. 829.
*Homolateral Contortion in Malignant Tumor of Lower Respiratory Tract. G. A. Bosco.—p. 831.
*Pulmonary Forms of Undulant Fever. L. Bethoux.—p. 835.
*Prognosis in Nephritis with Uremia. A. Puech and P. Cristol.—p. 836.

Nosology of Parrot's Pseudoparalysis.—Péhu and Mestrallet state that, on the basis of information furnished by roentgen examination, the classification of Parrot's disease should be modified. The disease does not correspond to the single anatomic lesion of epiphyseal detachment or separation and should be considered a syndrome, in the production of which both bone lesions and muscular changes are involved. The motor impotence and the special attitudes that the affected extremities present should be attributed to anatomic or functional alterations in the muscle-tendon apparatus.

Homolateral Contortion in Malignant Tumor of Lower Respiratory Tract.—According to Bosco homolateral contortion is a sign of positive value in the diagnosis of malignant tumors of the lower respiratory tract. Homolateral contortion is constituted by a deformation of the homolateral half of the body of the patient. It appears only in cases of malignant tumors. It has never been observed in benign tumors or in tuberculosis, gangrene and syphilis of the lung. In a large percentage of cases of alveolar and pleural cancer and in bronchial tumors, homolateral contortion appears and increases in degree as the neoplasm invades the lung. It is of functional origin and exteriorizes a condition of sympathetic nervous irritability. In the presence of a case of homolateral contortion one should think only of a malignant respiratory tumor. The condition is in no way connected with thoracic deformation; although the two signs may coexist, their pathogenesis is different. When homolateral contortion develops it appears earlier than thoracic deformation.

Pulmonary Forms of Undulant Fever.—Bethoux reports four cases of undulant fever in which the pulmonary symptoms predominated and points out the relative benignity of this form of the disease. In the four cases described, the condition was cured, without complications, by symptomatic treatment. The variety of the pulmonary forms of undulant fever and the pulmonary affinity are doubtless to be explained by a particular tropism of certain bacteria. In addition to the "Mediterranean phthisis" that is observed in severe undulant fever with a grave general condition (anemia, asthenia, loss of weight, profuse sweating and high fever) there occur severe, polymorphous forms with variable pulmonary manifestations.

Relative Value of Alkali Reserve and Polypeptidemia in Prognosis in Nephritis with Uremia.—Puech and Cristol state that in toxic uremia the alkali reserve is usually, but not always, lowered. When it is lowered, accidents and death occur with variable figures for carbon dioxide. The alkali reserve may remain low for a long time without causing disturbances. In cases of uremic accidents and at the time of death in uremia, the authors always found a marked hyperpolypeptidemia. Azotemia is of value in determining the general and late prognosis in chronic nephritis according to the laws of Widal, and polypeptidemia is of value in determining the particular and immediate prognosis. The authors believe that the decreased alkali reserve is of much less value in the prognosis than either the azotemia or the polypeptidemia.

37: 845-860 (June 29) 1929

Temporary Osteosynthesis in Children. L. Ombrédanne.—p. 845.
*Humoral Syndrome in Hemorrhagic Pancreatitis. L. Binet, P. Brocq and G. Ungar.—p. 848.
Hygiene of Pregnancy. Turenne.—p. 850.
Roentgen Treatment of Angina Pectoris. Nemours-Auguste.—p. 852.
*Late Pleural Intolerance in Artificial Pneumothorax. F. Dumarest.—p. 854.

Cytologic and Biochemical Changes in Blood in Hemorrhagic Pancreatitis.—In acute hemorrhagic pancreatitis produced experimentally in twelve dogs, Binet et al. noted a characteristic humoral syndrome. This syndrome consists of cytologic and biochemical changes in the blood. Leukocytosis and polycythemia are present at first; later the number of erythrocytes decreases. The free dextrose content of the blood remains normal and the chloride content is sometimes increased; the characteristic biochemical change in the blood is the increase in the total fat content and in the cholesterol content. The authors consider the milky appearance of the serum and the plasma, together with the increased total fat content and cholesterol content of the blood, a humoral sign of great importance in favor of the diagnosis of hemorrhagic pancreatitis with steatonecrosis, when it is present during an acute abdominal syndrome.

Late Pleural Intolerance in Artificial Pneumothorax.—Dumarest reports a case of ulcerative lesions of the left lung in which late pleural sensibility became so great as to render impossible, and even dangerous, both the maintenance of pneumothorax by oleothorax and the substitution of pneumothorax by oleothorax. The author believes the reactions due to late pleural sensitiveness may, because of their intensity, render impossible the continuation of a pneumothorax. There is no relation between the reactions and the intrapleural pressure: they are produced in sensitive persons not only by the insufflation of air but by the injection of paraffin, and they cannot be prevented by any precaution of technic or method. In some cases they may be of great severity and may hasten the fatal outcome.

Revue de Chirurgie, Paris

67: 197-262, 1929

*Shock in Spinal Anesthesia. M. St. Butoïano and C. Stoïan.—p. 197.
Tumors of Aberrant Mammary Gland Tissue. P. Razemon and G. Bizard.—p. 226.

Shock in Spinal Anesthesia.—From the study of 3,800 spinal anesthesias that they have induced during the past nine years, Butoïano and Stoïan conclude that shock is always present following this operation. The most constant and most evident clinical proof of the presence of this condition is the drop in the blood pressure. After the operation the blood pressure rises. Spinal anesthesia is contraindicated in patients in whom shock, septicemia or toxemia is present.

Schweizerische medizinische Wochenschrift, Basel

59: 637-664 (June 22) 1929

*Therapeutic Value of Sulphur. E. Bürgi.—p. 637.
Surgery of Pancreas. E. Bircher.—p. 640.
*Electrolytic Dilation of Strictures of Urethra. H. Koller-Aeby.—p. 648.
Action of Chlorophyll and Chlorophyll Therapy. E. Gsell.—p. 650.
C'cn. Metabolism of Carbohydrates, Ammonia and Cholesterol: Pathogenesis of Beriberi. A. Gigon.—p. 656.

Therapeutic Value of Sulphur.—Bürgi discusses the different methods of administering sulphur and its therapeutic value in various diseases. He reviews experiments that were conducted to determine the influence of sulphur on the basal metabolism, the glycogen content of the liver and the carbohydrate metabolism. It was found that in diabetic patients sulphur therapy brings results similar to those of insulin. Sulphur proved valuable likewise in the treatment of exophthalmic goiter. The author also enumerates the therapeutic qualities of sulphur in tuberculosis of the bones, in chronic arthritis and in different forms of dermatitis such as eczema, furunculosis, acne and psoriasis. One point is stressed particularly; namely, that sulphur gives the best results, when it is administered in minute quantities.

Electrolytic Dilation of Strictures of Urethra.—Koller-Aeby explains the theoretical foundations for his method of electrolytic dilation of strictures of the urethra. He describes the instrument that he employs and the technic of the treatment. He reports four cases in which this method brought favorable results.

Pediatria, Naples

37: 623-678 (June 15) 1929

*Intravenous Injection of Methenamine in Treatment of Chorea. F. De Capua.—p. 623.
*Complications of Bacillary Dysentery in Early Childhood. L. Greppi.—p. 635.

*Polyuria and Albuminuria in Malaria in Early Childhood. A. Zallocco. —p. 647.
Mikulicz's Syndrome: Case. M. Cimmino.—p. 655.
Etiology and Pathogenesis of Achondroplasia Associated with Gigantism of Trunk. U. Sala.—p. 661.

Intravenous Injection of Methenamine in Treatment of Chorea.—De Capua treated twelve children with chorea, aged from 7 to 12 years, by means of methenamine. The children also had rheumatism, in some complicated with heart disease. Some of them had not received any treatment, and in others, treatment with magnesium sulphate, arsenic, mercury or glandular extracts had failed. The author used a 5 or 10 per cent solution of methenamine. Injections were made into the basilic vein, every other day, beginning with 2 cc. and sometimes reaching a maximum of 8 cc. During the first days of the treatment no other drugs were given. The renal function was carefully watched. This treatment had a favorable effect on the motor disturbances of the children and also on the rheumatism. These effects, however, are not constant and they become less marked when the chorea is not of an infectious origin. Methenamine seems to give good results in cases in which the chorea is associated with an infection, such as encephalitis or polyarthritis. The therapeutic effect of the drug is probably ascribable to the bactericidal action of formaldehyde, and perhaps, also, to protein shock.

Complications of Bacillary Dysentery in Early Childhood.—Greppi observed eleven children, aged from 7 months to 15 years, with bacillary dysentery. In five of these children renal lesions were present; two had edema; one had pyelocystitis; three had arthropathies, and one had keratoconjunctivitis. The certainty of renal lesions was confirmed by the presence of casts and albumin in the urine. In the group of patients with renal disturbances one died. Of the remaining four, one exhibited edema and a nephrosis, while in the other three patients, the aggravated symptoms of dysentery persisted, associated with the renal lesion. Injections of a solution of thyroid extract gave good results in this case. After the fifth injection, there was an abundant diuresis and the edema disappeared. The author concludes that renal disturbances are a frequent complication of bacillary dysentery in early childhood. This does not seem to be the case in adults.

Polyuria and Albuminuria in Malaria in Early Childhood.—Zallocco examined the urine of 100 children with malaria. The amount of urine increased when the chills appeared, diminished during the febrile stage and again increased at the end of the malarial attack. The urine had a high specific gravity and contained abundant chlorides and phosphates. Polyuria was observed in 12 per cent of the patients; albuminuria in 26 per cent. Albuminuria was noted during the febrile attack, after it, and even after signs of infection were no longer present. Of the twenty-six patients with albuminuria, twenty-one had tertian malaria and five had estivo-autumnal malaria. In patients with tertian malaria the amount of albumin in the urine varied between 0.10 and 0.30 Gm. per thousand cubic centimeters and in the patients who had estivo-autumnal malaria the amount varied between 0.30 and 0.60 Gm.

Policlinico, Rome

36: 479-514 (April 8) 1929. Practical Section

*Survival of Leukocytes in Agonal and Preagonal States. R. Lusena.—p. 479.
*Hematogenic Tuberculosis of Muscles. G. Corradino.—p. 482.
Irreducibility of Wassermann Reaction in Certain Cases of Syphilis. A. Mucci.—p. 486.

Survival of Leukocytes in Agonal and Preagonal States.—From his researches, Lusena draws the following conclusions: 1. In the premortal states, the character of the leukocytes may be normal or it may be changed. 2. The changes in the character of the leukocytes stand in a definite relation to the disease that is the cause of death. 3. Exclusive of diseases of the hematopoietic system, the character of the leukocytes is not influenced by the exacerbation of the patient's condition and is maintained as it was at first, even with the advent of the agonal state.

Hematogenic Tuberculosis of Muscles. — Corradino states that the muscles are, as a rule, very resistant to threatened invasion on the part of tubercle bacilli. The genuine hematogenic type of tuberculous infection is therefore rare. He reports two cases. The patients, both men, were aged 44 and 21, respectively. The treatment of tuberculosis of the muscles is chiefly surgical. In the abscessed types, evacuation, followed by the injection of an antiseptic fluid, may be sufficient. Generally, however, removal of the tuberculous focus will be necessary, followed by excision down to the healthy tissue. Surgical treatment will be greatly aided by the hygienic, dietetic treatment of tuberculosis in general.

Archivos Latino-Am. de Pediatría, Buenos Aires

18: 205-286 (April) 1929. Partial Index

*Cirrhosis of Liver Associated with Ascites and Splenomegaly: Appearance in Early Childhood: Complete Disappearance of Ascites Under Antisyphilitic Treatment. J. Bonaba and V. Raggio.—p. 224.

Cirrhosis of Liver Associated with Ascites and Splenomegaly. — Bonaba and Raggio assert that ascites during early childhood is a rare condition and it should make one suspect the presence of heredosyphilis. The authors' patient, aged 10 years, had presented ascites, general emaciation and cirrhosis of the liver since the age of 10 months. At the age of 2 years, 500 cc. of a yellowish liquid was withdrawn. A year later a second aspiration was made. When she was 10 years old the ascites recurred very quickly after each aspiration. During a period of six weeks, four aspirations were made and 7,100 cc. of liquid was withdrawn. Sulpharsphenamine in small and increasing doses was given. The patient's intolerance to this drug led the author to resort to mercury rubs, and then to the administration of bismuth. The results were excellent. The ascites disappeared completely; the child made a good recovery and after five months was still in good condition. The author believes that in this case a spontaneous remission did not play a rôle in the recovery, which was effected wholly by the antisyphilitic treatment.

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Boletín de la Soc. de Obst. y Ginec. de Buenos Aires

8: 5-74 (June 5) 1929. Partial Index

*Cystic Sarcoma of Uterus. J. C. Ahumada and A. Rubinstein.—p. 6.

Cystic Sarcoma of Uterus.—Ahumada and Rubinstein say that in from 2 to 4 per cent of cases of myoma of the uterus, the myoma undergoes sarcomatous degeneration. This condition should be differentiated from malignant myoma. The authors report a case in which the presence of a definite capsule led to the diagnosis of cystic myoma. The histologic examination of the extirpated tumor, however, showed that the cyst was circumscribed by a layer of fibrous tissue that had the structure of a polymorphous sarcoma.

Semana Médica, Buenos Aires

36: 1503-1578 (June 13) 1929

*Psychic Disturbances Associated with Parkinsonian Syndrome. R. Hernández Ramírez.—p. 1503.
Value of Dick Test: Relation Between Dick Test and Immunity to Scarlet Fever. J. M. Miravent and E. Chiodi.—p. 1515.
Cystic Adamantinoma of Lower Jaw. M. Somalo.—p. 1524.
*Oleothorax in Treatment of Pulmonary Tuberculosis. S. M. Costa, H. L. Alcoba and G. Fonseca.—p. 1528.
Sexual Cycle in Rats and Endocrine Factors. E. B. del Castillo.—p. 1530.
Postoperative Biliary Peritonitis. R. L. Masciottra.—p. 1557.
Cavern in Prostate After Abscess. J. Svibel and A. Trabucco.—p. 1561.
Neurofibromatosis: Incomplete Forms: Histology and Pathogenesis. J. M. Jorge and D. Brachetto-Brian.—p. 1563.
Intestinal Myiasis: Case. Travella and Barralt.—p. 1569.
*Poisoning Caused by Sour Milk. M. Etchegaray.—p. 1570.
Catamenial Aphthae. C. Losada.—p. 1576.

Psychic Disturbances Associated with Parkinsonian Syndrome.—Hernández Ramírez noted many cases of parkinsonian syndrome following epidemic encephalitis. The mental disturbances were a consequence of the encephalitis in some patients; in others the mental abnormality had existed previously and the disease intensified it; but in all patients the psychic condition preceded the appearance of the parkinsonian syndrome. The author observed changes of character and sometimes insanity in postencephalitic parkinsonian patients. The similarity (more apparent than real) of the symptoms that postencephalitic parkinsonian patients exhibited, and the symptoms of some forms of dementia praecox, does not make the differential diag-

nosis between the two conditions difficult. On the basis of his observations and a review of the literature, the author denies the existence of a mental syndrome that can be regarded as being characteristic of parkinsonian patients.

Oleothorax in Treatment of Pulmonary Tuberculosis.—Costa et al. successfully performed oleothorax in two patients who had a large purulent intrapleural effusion. The patients were emaciated and cachectic. They had fever and were toxic from the effusion. In one of them, several punctures yielded 1,550 cc. of liquid and oleothorax with sterile paraffin was performed. In the other patient, a therapeutic oleothorax, which was repeated several times, was performed. In both cases the symptoms disappeared and the fluid became sterile. The excellent results were lasting. The authors advise a wider use of oleothorax in this condition.

Poisoning Caused by Sour Milk.—Etchegaray says that recently four fatal cases of poisoning produced by sour milk were reported in Buenos Aires. He criticizes the advice given by some physicians to laymen to use sour milk prepared at home with the aid of bacteria. The milk thus soured may endanger the life of the consumer. The fermentation of milk requires expertness and care and should not be confided to laymen. The milk may be contaminated with pathogenic bacteria and an unexpected circumstance may permit the development of toxins and ptomaines, produced by the decomposition of albumins in the milk.

Deutsche medizinische Wochenschrift, Berlin

55: 985-1030 (June 14) 1929

*Evidence That There Is No Active Immunity in Syphilis. W. Kolle and R. Prigge.—p. 985.
Active Charcoal as Adsorbent for Toxins of Bacteria and for Endotoxins. L. K. Wolff.—p. 986.
*Treatment of Habitual Constipation. E. Rose.—p. 988.
Significance of Roentgen Spectrum for Characterization of Pharmaceutic Preparations. P. M. Wolf and H. Zeglin.—p. 989.
*Effect of External Application of Heat and Cold on Secretory Activity of Digestive Organs. E. F. Müller and R. Hölscher.—p. 990.
*Suitability of Paraffin for Production of Hyperthermia. A. Fürstenberg and E. Hoffstaedt.—p. 994.
*Clinical Aspects and Pathologic Conditions in Primary Tuberculosis of Skin. O. Dittrich.—p. 996.
Treatment of Eczema and Dermatitis. A. Philippson.—p. 997.
*Occurrence of a Foreign Protein Body in Placenta in Eclampsia and in Toxicosis of Pregnancy. E. Schwarzkopf and H. Sievers.—p. 999.
Differential Diagnosis of "Climatic Fever" with Enlarged Spleen. C. M. Hasselmann.—p. 1000.
Carcinoma of Cervix Uteri. H. Runge.—p. 1001.
Cure of Small Fistula of Bladder by Means of Intravesical Electrocoagulation. K. Hellmuth.—p. 1001.
Simple Urethritis Following Diathermy. W. Joseph.—p. 1002.

Evidence That There Is No Active Immunity in Syphilis.—In order to determine whether, after a complete cure of syphilis, the patient has acquired an active immunity, Kolle and Prigge made experiments on rabbits. They found that a genuine active immunity against syphilis does not exist. However, their tests gave new proofs of an immunity against chancres. A superinfection without manifest symptoms could be demonstrated in the early as well as in the later periods following the treatment with neoarsphenamine. Tests were made from ninety to 240 days after the treatment. The authors conclude that the immunity in syphilis is an infection immunity.

Treatment of Habitual Constipation.—Rose discusses that form of habitual constipation which is not due to organic changes, such as intestinal strictures, pressure from tumors, appendicitis or disturbances of the functioning of the stomach. He points out that this form of constipation occurs comparatively often. Mannaberg observed that among 500 patients, 50 per cent of the women and 34 per cent of the men were suffering from this ailment. Defecation is the result of a chain of partly voluntary and partly involuntary functions, of nervous, hormonal, muscular, humoral and secretory processes. A deficient functioning may result if one or the other factor fails to work properly. Psychoanalysts assert that disturbances in defecation are frequently due to nervous conditions that lead to suppression. Irregularity in defecation is probably the most common cause of constipation. The author discusses various medicaments that may be employed in the treatment of constipation. He himself generally prescribes a certain type of pill, containing mostly vegetable constituents. However, he asserts that neither the prescription of a certain diet nor medicaments are the most significant factors in the treatment of constipation. It is advisable to inform the patient about the causes of his ailment, but it is absolutely necessary to impress on him the urgency of a regular habit in defecation.

Effect of External Application of Heat and Cold on Secretory Activity of Digestive Organs.—Müller and Hölscher point out that the application of heat in disturbances of the internal organs is nearly as old as medicine itself. In order to give a satisfactory, scientific explanation of the mechanism involved in the treatment with hot applications, the authors made experiments on animals and observations on healthy persons and on patients. They found that heat applied to the skin effects a restraint on the secretory function of the abdominal organs. This reduced secretion indicates that the functioning of these organs is lessened, the metabolism, the inflow of blood and the water content of the tissues are reduced, and the organs become less active. Cold applications, however, have the opposite effect. It was observed that, if the temperature of the skin was reduced, the secretions of the stomach and of the duodenum not only increased in quantity but a higher concentration of digestive ferments also was noted. Such changes usually become manifest in a dull sensation of pressure in the stomach. These conditions may be improved by the application of heat, because by this means the organ is brought to rest. The application of heat in disturbances in the abdominal organs may therefore be characterized as a preserving therapy. This mechanism differs essentially from that which is involved when heat is applied in the treatment of peripheral organs, such as muscles and joints. In the latter instances, heat is applied in order to produce hyperemia. In disturbances of the abdominal organs, hot applications do not effect a better inflow of blood, but reduce the functioning and spare the organs. In short, the reaction of the abdominal organs to the application of heat or cold is the opposite of the reaction of the skin. From these observations the authors conclude that increase and decrease in the functioning of these organs should be treated by the opposite therapeutic influence on the skin.

Suitability of Paraffin for Production of Hyperthermia.—Fürstenberg and Hoffstaedt direct attention to the fact that in recent years several authors have emphasized the therapeutic value of hyperthermia. It has given good therapeutic results, especially in diseases due to streptococci. Hyperthermia was given formerly mainly in the form of hot baths, steam baths, hot packs, mud baths and sand baths. The authors recommend paraffin for the production of hyperthermia. This treatment was first perfected by de Sandfort and Rignon. A paraffin oil mixture is brought to a temperature of from 176 to 248 F. From a certain distance it is then sprayed over the body surface with the aid of an oxygen tank. After the body is covered with paraffin the patient is wrapped in a blanket. He should rest for about thirty minutes. After the completion of the treatment the paraffin can be easily removed. The authors employed this method on forty patients. The pulse rates and the temperature curves were carefully observed, and it was found that this method for the production of hyperthermia is superior to other methods because it does not tax the circulation to the same extent. The patients did not object to this therapy. The treatment is valuable because it makes it possible to apply heat up to 158 F. without causing detrimental results.

Clinical Aspects and Pathologic Conditions in Primary Tuberculosis of the Skin.—Dittrich asserts that primary tuberculosis of the skin manifests itself not only in the development of ulcers but also in infiltrations with typical soft swellings of the regional lymph nodes. In the histologic examination it is often difficult to demonstrate a purely exogenic infection, because there is also the possibility of an endogenous superinfection from the intestinal lymph nodes. In cases of primary tuberculosis of the skin, in which the tuberculous nature of the condition had been proved by animal inoculation, it was possible to demonstrate the presence of tubercle bacilli on the arterial walls of the otherwise unchanged fatty tissue.

Occurrence of a Foreign Protein Body in Placenta in Eclampsia and in Toxicosis of Pregnancy.—Schwarzkopf and Sievers examined seven placentas. Two of them were from women who had passed through a normal pregnancy and con-

finement; the other five were from women who had suffered from eclampsia or other toxicoses of pregnancy. In these five placentas the authors could again demonstrate the presence of the peculiar protein body that they had detected during previous tests. Concentration by evaporation and even precipitation with alcohol did not change the characteristic properties of the protein body which were only somewhat weakened. In the two placentas from the women who had not been subject to eclampsia or to other toxicoses, the protein body could not be detected. With the concentrated aqueous extracts of all the placentas, the authors then made experiments on mice. They found that these extracts were not so extremely poisonous as some other authorities assume. Of seven animals, two died of embolism. This is explained as being due to the fact that the placentas contained substances that promoted coagulation. In one animal a spontaneous abortion followed the injection, and nearly all the animals suffered from diarrhea. These conditions were probably caused by choline. This substance is found in the aqueous extracts of the placentas in a comparatively high concentration, and it is known that choline exerts a strong influence on the pregnant uterus as well as on the intestine.

Klinische Wochenschrift, Berlin

8: 1057-1104 (June 4) 1929

Anatomic Foundation of Apoplectic Attacks. C. Böhne.—p. 1057.
Nature and Mechanism of Jarisch-Herxheimer Reaction. Bettmann.—p. 1060.
Specific Dynamic Action of Liver. R. Nothhaas and J. Mulzer.—p. 1065.
Chemical Composition of Melanotic Pigment. F. Schaaf.—p. 1066.
Influence of Hormone of Parathyroids on Calcium Content of Blood. M. Nothmann.—p. 1068.
*Influence of Thyroid and of Pancreas on Carbohydrate Metabolism of Liver. R. Siegel.—p. 1069.
Symptomatology, Pathogenesis and Treatment of "Achylous Chloranemia." P. Kaznelson, F. Reimann and W. Weiner.—p. 1071.
*Relationship Between Healing of Wound and Acid-Base Equilibrium. H. Kalk.—p. 1074.
Adults Supposedly Belonging to Group AB but Without Demonstrable A Receptor. O. Thomsen.—p. 1075.
*Studies Concerning Functioning of Stomach in Diseases of Heart and Kidney. J. Fliederbaum and N. Pianko.—p. 1076.
Preparation and Standardization of Staphylococcus Serum. H. Gross.—p. 1079.
Rapid Micromethod for Performing Meinicke Reaction. E. Meinicke.—p. 1080.
Electrophysiologic Examinations of Healthy and Diseased Skin: Significance of Concentration Effect. P. Keller.—p. 1081.
Studies in Affect Leukocytosis. E. Wittkower.—p. 1082.
Polycythemia with Diminished Total Volume of Blood. K. Hitzenberger and F. Tuchfeld.—p. 1083.

Influence of Thyroid and of Pancreas on Carbohydrate Metabolism of Liver.—In experiments on white mice Siegel found that the thyroid produces an internal secretion which stimulates the saccharification of liver glycogen. The point of attack of this hormone of the thyroid is in the liver cells. Investigations on the action of the pancreas revealed that the secretion of this organ hinders the saccharification of glycogen. According to the author there are two forms of diabetes; the alimentary and the endogenous. Alimentary hyperglycemia and glycosuria may be explained by a deficiency in insulin. Endogenous diabetes, however, is the result of an increased diastatic activity of the liver, which is caused by a secretion of the thyroid. In youth the action of the thyroid is relatively high. This may also explain the peculiarities of the diabetes mellitus that occurs in juveniles as compared to the diabetes mellitus that occurs in older persons.

Relationship Between Healing of Wound and Acid-Base Equilibrium.—Kalk reports the case of a man, aged 52, with a large roentgen ulcer on the back. Several attempts to cure the ulcer were of no avail and it remained unchanged for fifteen years. Then the patient developed a stenosis of the esophagus, which on careful examination proved to be a carcinoma. The narrowing of the esophagus increased rapidly, so that the intake of food was more and more limited. During this period of starvation, the ulcer on the patient's back healed in a very short time. It is known that fasting causes acidosis, and the author assumes that this sudden healing was due to the change in the acid-base equilibrium. He points out that Sauerbruch made a similar observation, and pediatricians report that infants with pyloric stenosis are usually free from infections.

Functioning of Stomach in Diseases of Heart and Kidney.—Fliederbaum and Pianko studied the functioning of the stomach in diseases of the heart and kidney. The results of their researches are summed up as follows: 1. In cardiac and renal diseases without edema and uremia the stomach functions normally. 2. In cases of renal insufficiency with increased blood urea, an increased excretion of urea through the stomach may be observed. 3. In cardiac and renal edema the gastric secretion is reduced, and the elimination of neutral red that has been introduced intramuscularly is retarded. 4. Edema that is due to local causes does not lead to such disturbances. 5. Changes in the functioning of the stomach do not indicate the severity of the cardiac or renal disturbance. However, they go parallel with the tendency of the skin toward edema and with the oliguria. These changes may precede the development of the edema. 6. The authors conclude that extrarenal factors are important for the development of edema.

Medizinische Klinik, Berlin

25: 933-970 (June 14) 1929

Nutritional Requirements and Nutritional Disturbances in Infants and Children. E. Müller.—p. 933. C'td.
*Air Embolism Caused by Crushing of Thorax: Its Demonstration. O. Schmidt.—p. 935.
Clinical Aspects of Acute and Chronic Uremia. L. Popper.—p. 937.
Multiple Necrosis of Skin and Eczema Cruris Following Injection Treatment of Varicose Veins. K. Hesse.—p. 939.
Clinical Aspects of Diffuse Sarcomatosis of Spinal Meninges. W. Misch and M. Landsberg.—p. 941.
Subcortical Motor Aphasia: Report of a Case of Paraphasia. G. H. Feist and O. Sittig.—p. 942.
*Use of Mud Baths in Postoperative Treatment. F. Khittl.—p. 944.
Action of Malaria Therapy on Nitrogen and Protein Contents of Cerebrospinal Fluid in Patients with Paresis. F. Halpern.—p. 945.
Causes and Treatment of Nosebleed. L. B. Seiferth.—p. 948.
Possibility of Immunization Against Tuberculosis with a Nonbacillary Lipoid. F. Mattausch.—p. 950.

Air Embolism Caused by Crushing of Thorax.—According to Schmidt, air embolism occurs in most cases of crushing injuries of the thorax. Postmortem examination of twelve patients who had had such an accident revealed air embolism in nine instances. The quantity of air detected varied between 0.5 cc. and 7 cc. The author describes the apparatus and the technic that are employed to demonstrate the existence of an air embolism. Additional evidence for the fact that blunt force against the thorax causes this condition was furnished by an experiment on a rabbit. The development of an air embolism is explained as follows: Crushing of the thorax causes interstitial emphysema and tearing of the tissues. Occasionally free air also enters the mediastinal space. The tearing of the tissues and vessels, the enormous increase in the intrapulmonary air pressure and the anatomic conditions make it understandable that air may enter the circulatory system and particularly the heart. The author assumes that in some of the cases the air embolism may have been largely responsible for the fatal outcome. He advises that in all cases of crushing of the thorax, the action of the heart should receive careful attention.

Use of Mud Baths in Postoperative Treatment.—Khittl points out that formerly mud baths were employed mostly for various forms of arthritis and in the treatment of chronic inflammatory processes of the female genitalia. He asserts that they are helpful in the therapy of all chronic inflammatory diseases. He discusses particularly the curative influence of mud baths in abdominal disturbances such as ulcers of the stomach and of the intestine, appendicitis and disturbances in the bile tract. Surgical treatment is often postponed in such cases. Balneotherapy in the form of mud baths can be of only palliative influence, and an operation has to be performed sooner or later. In order to prevent the development of adhesions after these belated operations, mud baths are of great value. They should begin as soon as the patient is free from fever and is able to be up and move a few steps in his room. It is not absolutely necessary that the surgical wound be completely healed. If areas of infiltration or suppuration exist, these should, of course, be covered by a protective plaster before the mud pack is applied. The curative value of these applications is due to the fact that they promote the inflow of blood and so prevent the formation of thrombi and adhesions. The author obtained good results with mud baths or mud packs in several hundred cases.

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Monatsschrift für Kinderheilkunde, Leipzig

43: 289-384 (May) 1929

*Etiology of Megacolon Idiopathicum. J. C. Schippers.—p. 289.
Infant Mortality, Birth Rate and Racial Relationships in Bavaria. A. Oettl.—p. 309.
Incidence of Hemolytic Streptococci in Pharynx in Children. H. Herzberg.—p. 328.
Increase in "Vakat" Oxygen in Experimental Exsiccosis. M. Fukuyama. —p. 338.
Lipoid Cell Splenohepatomegaly (Niemann-Pick). J. Schmitz and F. Thoenes.—p. 341.

Etiology of Idiopathic Megacolon.—Schippers believes that innervation disturbances of the (sacral) autonomic fibers may cause local meteorismus and constipation and that after a time compensatory work hypertrophy of the intestinal wall may develop. The presence of folds of mucosa at the transition between the sigmoid and the rectum as well as an abnormally long flexure, which predisposes particularly to kinking, greatly favors the development of this hypertrophy. Soon, however, secondary changes appear which gradually dominate the picture completely. In the postmortem examination of patients with idiopathic megacolon, changes in the nerves and ganglions in the wall of the intestine and in the mesocolon should always be sought for and the central nervous system also should be carefully examined.

Münchener medizinische Wochenschrift, Munich

76: 987-1026 (June 14) 1929. Partial Index

House Dust as Cause of Asthma. W. Storm van Leeuwen and J. J. Brutel de la Rivière.—p. 990.
Substitutive Therapy in Secretory Disturbances of Gastro-Intestinal Tract. R. Schindler.—p. 993.
Experiences with a Stable Shellac Reagent in Examination of Cerebrospinal Fluid. F. W. Mosbacher.—p. 994.
*Treatment of Pulmonary Tuberculosis with Quartz Lamp Irradiation. J. E. Kayser-Petersen.—p. 995.
*Subcutaneous Division of Sebaceous Glands: Method of Treatment of Acne Vulgaris. C. Moncorps.—p. 997.
Two New Possibilities for Use of Teichert's Electrically Lighted, Combined Laryngeal, Aural and Nasal Speculum. R. Korbsch.—p. 998.

Treatment of Pulmonary Tuberculosis with Quartz Lamp Irradiation.—Kayser-Petersen reports the case of a girl, aged 18, which is remarkable because it indicates that quartz lamp irradiation may be of harmful influence on a tuberculous process. After the patient had received irradiations for some time, it was noticed that the tuberculous infiltration had grown to twice the original size. It is, of course, not absolutely certain that the irradiation caused this development. However, the author thinks that it is advisable to omit irradiation in cases of this type.

Subcutaneous Division of Sebaceous Glands: Method of Treatment of Acne Vulgaris.—After giving a short review of the various methods that are generally employed in the treatment of acne, Moncorps describes a new method that he has employed successfully for the last two years. He characterizes it as a microsurgical therapy. Following the disinfection of the skin by means of alcohol, a special small knife is introduced into the opening of the sebaceous gland. On account of the structure of the excretory duct of the gland, the instrument is introduced in a somewhat oblique direction for about 3 or 4 mm. Up to this point the procedure should cause neither bleeding nor pain. Then the small knife encounters a resistance. It is pushed 1 mm. deeper and then its point is brought from 2 to 3 mm. upward. In this manner the sebaceous gland and the lower part of its excretory duct are slit open. The knife is turned and then with a shovel-like movement, but without cutting, it is pulled out. In this manner a part of the contents of the gland as well as the comedo is lifted out. As a result of the incision in the deeper layers, a few drops of blood will appear. The subcutaneous incision will be somewhat more painful when pustules and nodules are present than in noninflamed comedones. However, most patients do not complain of the pain if they see good results on the treated areas. In very sensitive patients iontophoretic anesthesia may be attempted. If the practitioner is skilful, from fifty to eighty glands may be treated during a ten minute session. After the treatment the area is again washed with alcohol. To effect hemostasis, the skin may be dabbed with a solution of epinephrine. Within the diseased areas even the healthy appearing glands should be treated. For two days following the treatment the area should not be washed but should be cleansed with a 50 per cent solution of alcohol. Patients who stay at the clinic may receive a treatment every day. Ambulatory patients should be treated only every second or third day. Whenever relapses occur in limited areas, the treatment has to be repeated. The main advantages of this method are that is brings quick results and does not leave any scars.

Tuberkulose, Munich

9: 109-136 (June 10) 1929. Partial Index

*Mitral Stenosis in Pulmonary Tuberculosis. G. Lewin.—p. 109.
*Diagnosis and Treatment of Fungous Diseases of Lungs Simulating Tuberculosis. G. Zickgraf.—p. 111.
Treatment of Fever in Tuberculosis. R. Menzel.—p. 113.
Silicic Acid in Treatment of Pulmonary Tuberculosis. J. Forster.—p. 118.

Mitral Stenosis in Pulmonary Tuberculosis.—Lewin reports three cases of a combination of these two conditions. The diagnosis of an active tuberculosis in a case of a concurring cardiac deficiency is difficult. Patients with phthisis seldom develop endocarditis. Whenever mitral stenosis and pulmonary tuberculosis occur concomitantly, the cardiac disturbance usually develops first. Concerning therapy the author states that rest, fresh air treatments and oxygen inhalation give the best results. Medicaments are of little value. Digitalis preparations may cause toxic conditions and should therefore be avoided.

Diagnosis and Treatment of Fungous Diseases of Lungs Simulating Tuberculosis.—Zickgraf asserts that pulmonary streptothricosis and similar fungous diseases of the lungs are more frequent than is commonly assumed. They often simulate tuberculosis. The anamnesis in such cases usually reveals a suppurative bronchitis of long standing. Characteristic is the absence of fever and of the toxic symptoms that are usually observed in tuberculosis. The results of percussion, auscultation and roentgenoscopy are nearly the same in fungous diseases and in tuberculous conditions. Of some significance for the differential diagnosis is the fact that the morbid changes in fungous diseases nearly always affect the lower lobes, and also that they progress slowly. The sputum has often a peculiar odor and, according to the statements of several patients, a somewhat sweetish taste. Bacteriologic examination of the sputum is of great importance. If fungi are found, the diagnosis is definitely established. The author also points out that in doubtful cases of pulmonary diseases in which tubercle bacilli cannot be detected, it is advisable to search for other pathogenic agents. Fungi may sometimes be the cause. In the treatment of fungous diseases the author obtained good results with special antigens, silicic acid and with chlorophyll preparations.

Wiener klinische Wochenschrift, Vienna

42: 797-828 (June 13) 1929

Fifty Years of Cystoscopy. V. Blum.—p. 797.
*Presence of Pancreatic Ferments in Bile. H. L. Popper.—p. 800.
*Mental Tests for Determination of Curative Effect of Malaria Therapy in Paresis. I. W. Kaufman.—p. 803.
*Treatment of Hydrocephalus. L. Schönbauer and K. Hutter.—p. 806.
Static-Dynamic Decompensation in Lordosis, Kyphosis, Scoliosis and Paralytic Forms of Thorax. M. Jungmann.—p. 807. C'en.
Specificity of Müller's Conglobation Reaction. J. Zollschan.—p. 810.
Behavior of Bilirubin in Relation to Pathogenesis of Icterus. O. Weltmann.—p. 811.
Technic of Catheterization and Irrigation of Bladder. T. Hryntschak. —p. 813.

Presence of Pancreatic Ferments in Bile.—Popper assumes that the overflow of pancreatic juice into the bile tract gives rise to disturbances in the gallbladder or in the liver. He examined the bile of ninety patients, the majority of whom were suffering from biliary disturbances. The bile was extracted during operation by puncture of the gallbladder. Several hours later tests were made to detect pancreatic ferments, such as trypsin and especially diastase. In five cases the content of the bile in diastase was slightly increased, and in twelve instances the increase was marked. The author observed that these twelve patients showed a tendency to develop acute cholecystitis and icterus. The connection with disturbances of the pancreas was also characteristic. He thinks that the diastase passes from the pancreatic duct directly into the bile tract, whereas some are of the opinion that it is carried

by the blood stream to the gallbladder. The latter assumption was disproved by the results of examinations on the serum.

Mental Tests for Determination of Curative Effect of Malaria Therapy in Paresis. — Kaufman describes mental tests that were given to patients who had undergone malaria therapy for paresis. The aim of these tests was to determine the degree of restitution of the mental faculties and the capacity or incapacity for work. It was found that the fever treatment improved the mental faculties of the patients. The degree of improvement varied not only in the different patients but also in the various faculties of each person. The maximum of betterment was generally noted about four months after the completion of the treatment. In the solving of problems that require a comparatively high degree of mental effort, such as arithmetic problems, the improvement advanced more slowly, reached its maximum later and was on the whole less satisfactory than in the reading, writing or memory work. It was also observed that the degree of improvement was more or less in direct proportion to the number of hours of high fever to which the patient had been subjected.

Treatment of Hydrocephalus. — Schönbauer and Hutter report the case of a boy, aged 12, who vomited frequently and complained of headaches, dizziness and gradual loss of sight. A neurologic examination revealed disturbances in motility and sensibility and led to the diagnosis of hydrocephalus. Because roentgen irradiation had given good results in a number of cases of hydrocephalus, the boy was given several roentgen treatments. They were, however, of no avail, for his vision did not improve but became steadily worse. An operation seemed unavoidable. After evaluating various operative methods, the authors came to the conclusion that the radical removal of the secreting choroid plexus would be the best method. A piece of bone was removed over the left occipital lobe. A puncture of the posterior cornu yielded a clear fluid. The dura was turned back, exposing the brain. The vessels surrounding the puncture needle were subjected to electrocoagulation. Then the brain was incised down to the ventricle and the choroid plexus was exposed. After the fluid had been removed, the plexus was cauterized by means of diathermy. The electrocoagulation prevented hemorrhage and shortened the time of operation. Following this treatment the patient's headaches and dizziness disappeared and the decrease of vision was checked. Eighteen months later, the old symptoms recurred and a trephination was performed on the right side. Since then disturbances have not been observed. The authors point out that this method should be employed in those instances in which the power of vision is not yet too far reduced. However, since this treatment is comparatively dangerous, it should be employed only if it is the last means to prevent blindness.

Wiener medizinische Wochenschrift, Vienna

79: 765-796 (June 8) 1929

Heredity in Mental Disturbances. Wagner-Jauregg.—p. 767.
*Dietetic Therapy with Foreign Proteins: Modern Dietary Treatment with Organs of Internal Secretion. W. Schlesinger.—p. 772.
Problems in Modern Surgical Treatment of Gastric and Intestinal Ulcers. A. Winkelbauer.—p. 777.
Symptomatology, Diagnosis and Treatment of Various Anemias. A. Herz. —p. 781. C'tn.

Dietetic Therapy with Foreign Proteins: Modern Dietary Treatment with Organs of Internal Secretion.—Schlesinger points out that whereas formerly protection was the principal therapeutic aim, modern methods endeavor to activate the innate energies of the body. This tendency is especially noticeable in the dietary treatments of recent years. The author discusses the modern therapy with organs of internal secretion, such as the thymus, spleen and liver. He states that it has not yet been definitely determined in what manner these organs exert their therapeutic influence. He reasons that their hormonal secretions or their content in vitamins might be the significant factors. However, this would make them only substitutional agents. Investigations made by other authors have revealed that the mechanism involved is more complicated and that they activate the protoplasm. The author thinks that in the case of liver therapy a specific action might be involved, but generally the dietary treatment with organs of internal secretion effects activation of the protoplasm. He also states that vitamins, hormones and activating substances do not antagonize each other but function together, and they may be found not only in these glandular organs but also in other nutritional substances.

Zeitschrift für klinische Medizin, Berlin

110: 469-632 (May 31) 1929

*Nature and Causes of Primary Oliguria. K. Grassheim.—p. 469.
Changes in Cerebrospinal Fluid in Internal Diseases with Cerebral and Meningeal Symptoms. F. Reiche.—p. 506.
*Diagnostic Value of Determinations of Polarization Capacity of Skin in Diseases of Thyroid. W. Lueg and K. Grassheim.—p. 531.
*Effect of Intravenous Injections of Hypertonic Solutions of Sugar on Sugar Content of Blood. O. Klein and H. Holzer.—p. 540.
Clinical Aspects of Weil's Disease. K. Hoesch.—p. 557.
*Changes in Electrocardiogram Following Acute Occlusion of Coronary Arteries. J. Oettinger.—p. 578.
*Effects of Arsphenamine on Pigment Metabolism. E. W. Kassatkin, A. J. Grubina and S. M. Melhart.—p. 596.
Work Metabolism and Basal Metabolism in Disturbances of Sympathetic Nervous System and in Exophthalmic Goiter. S. Thaddea.—p. 611.

Nature and Causes of Primary Oliguria.—From the study of ten cases of so-called primary oliguria, Grassheim concludes that this condition is only a symptom of disturbances in various organs. Just as polyuria is only a symptom of diabetes insipidus, oliguria is the symptom of a disease that has been designated antidiabetes insipidus. Not only in the central origin and in the quantity of water excreted are the two conditions directly opposite but also in the mechanism involved; in diabetes insipidus the capacity of the tissue for swelling is decreased whereas in antidiabetes insipidus it is increased. Some observations even indicate that one disease may pass over into the other and that the differences between the two conditions are only qualitative; the same system is sometimes inhibited, sometimes stimulated. The chief points of origin of oliguria may be divided into four groups. The first group includes the sympathetic-trophic centers of the thalamencephalon and particularly the hypophyseal system with pedicle, infundibulum and tuber cinereum as well as the water and the salt centers. The second group includes the glands of internal secretion; these glands are closely correlated to the thalamencephalon as a result of their hormonal activities. The third and fourth groups are, respectively, the peripheral sympathetic nervous system and the tissues.

Diagnostic Value of Determinations of Polarization Capacity of Skin in Diseases of Thyroid.—Lueg and Grassheim state that in exophthalmic goiter and myxedema the basal metabolism and the polarization capacity of the skin lie parallel. The changes in the polarization capacity of the skin are apparently produced only by the thyroid; in hypophyseal obesity, with decreased basal metabolism, the polarization capacity of the skin remains normal. The old clinical fact that, in certain cases of exophthalmic goiter, symptoms of myxedema are present simultaneously was confirmed by the observation that in such cases the polarization capacity of the skin may be increased in the upper part of the body and decreased in the lower part. Following roentgen irradiation and operation in cases of exophthalmic goiter, the basal metabolism returns to normal before the polarization capacity of the skin does. The authors believe that in the diagnosis of diseases of the thyroid the determination of the polarization capacity of the skin is as important as the determination of the basal metabolism; in obesity it may be of importance in the differential diagnosis. The method is to be recommended from the practical standpoint because it is independent of external factors that play a great rôle in exophthalmic goiter and because it can be carried out in a relatively short time and, unlike basal metabolism determinations, without changing the psychic condition of the patient.

Effect of Intravenous Injections of Hypertonic Solutions of Sugar on Sugar Content of Blood—According to Klein and Holzer, intravenous injection of small quantities of sugar is followed by a typical change in the sugar content of the blood; a rapid and marked increase in the sugar content of the blood occurs in which the curve reaches its peak in less than thirty seconds after the injection and is followed by a somewhat slower decrease. The original value is almost always reached in from four to five minutes. Variations from this normal blood sugar curve following the intravenous injection of small quantities of sugar occur in diabetes (greatly delayed

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decrease with frequently a second increase), in diseases of the liver (curve does not reach the original value and frequently shows after-waves), in cardiac decompensation (somewhat delayed increase and slower decrease), in high blood pressure (rapid decrease in the blood sugar to below the original value with frequently a second increase) and in edema (slight increase in the sugar content of the blood, decrease to below the original value and secondary increase). Following the injection of levulose in persons with normal metabolism, the changes in the blood sugar curve are similar to those that occur following the injection of dextrose, except that the drop in the blood sugar curve is more rapid. In disease of the liver the drop in the blood sugar curve following injections of levulose is delayed and the curve frequently shows secondary waves. In a case of catarrhal icterus there occurred, following an injection of 3.2 Gm. of levulose, a rapid drop in the sugar content of the blood to below the normal value and simultaneously a large amount of levulose was excreted in the urine; in other cases of diffuse injury of the liver with delayed decrease in the sugar content of the blood, sugar was not excreted in the urine. In fasting persons the changes in the sugar content of the arterial blood immediately after intravenous injections of dextrose or levulose are of a more continuous character.

Changes in Electrocardiogram Following Acute Occlusion of Coronary Arteries.—Oettinger describes typical changes that occur in the electrocardiogram in the acute necrotic and subsequent stages of occlusion of the coronary arteries. He emphasizes the great practical significance of electrocardiographic examination in all cases in which the clinical course is atypical and in which, therefore, a diagnosis could not be made with the ordinary methods of examination.

Effects of Arsphenamine on Pigment Metabolism.—In a combined clinical and experimental study of the effects of arsphenamine on pigment metabolism, Kassatkin et al. found that injections of arsphenamine usually cause an increase in the urobilin content of the feces; as a rule this is accompanied by an increase in the bilirubin content of the blood, the urobilin content of the urine and the number of reticulocytes; in guinea-pigs the decrease in the hemoglobin and in the number of erythrocytes is more marked. These changes must be regarded as the expression of increased hemolysis and increased regeneration of the blood. The authors call attention to this phase of arsphenamine action because it may be of significance in the treatment of syphilis in general.

Zeitschrift für Kreislaufforschung, Dresden

21: 313-344 (June 1) 1929

*Calcium Deposits in Heart Muscle Following Poisoning with Corrosive Mercuric Chloride. A. Rüther.—p. 313.
*Mechanism Involved in Diuretic Action of Caffeine. M. Morimoto.—p. 324.

Calcium Deposits in Heart Muscle Following Poisoning with Corrosive Mercuric Chloride.—Rüther reports a case of fatal poisoning with corrosive mercuric chloride, in which microscopic examination of the myocardium revealed marked degenerative changes and numerous areas of calcification. The author assumes that the calcium was deposited in muscle fibers that had been injured by the corrosive mercuric chloride.

Mechanism Involved in Diuretic Action of Caffeine.—In perfusion experiments on dogs, Morimoto found that even small amounts of caffeine caused contraction of the renal vessels. In all probability, therefore, the diuretic property of caffeine is not due to its action on the renal vessels. The author believes that caffeine acts directly on the renal epithelium.

Zeitschrift für urologische Chirurgie, Berlin

27: 187-328 (May 10) 1929

*Neurogenic Origin of Ureteral Automatism. P. Blatt.—p. 192.
Diagnosis in Urology. P. Blatt and O. Schwarz.—p. 206.
Function of Sphincter of Bladder. A. Brenner.—p. 241.
*Mixed Infections in Tuberculosis of Kidney. B. Frisch.—p. 248.
Pyelographic Demonstration of Extravasations in Pelvis of Kidney. F. Fuchs.—p. 257.
*Changes in Kidney Following Division of All Its Nerve Fibers. F. de Gironcoli.—p. 266.
*Resection of Last Rib to Facilitate Exposure of Kidney. P. Halbfas-Ney.—p. 275.
Pathogenesis of Hypernephroma. W. Pollak.—p. 280.
Sacral Anesthesia in Prostatectomy in Old Men. O. Stricker.—p. 290.
Chronic Nontuberculous Conditions of Epididymis with Clinical Picture of Tuberculous Epididymitis. E. Suren.—p. 304.
Rôle of Infection in Atonic Dilatation of Ureters. A. Zinner.—p. 315.

Clinical Significance of Experimental Demonstration of Neurogenic Origin of Ureteral Automatism.—Blatt describes experiments on rabbits in which he demonstrated the neurogenic origin of ureteral automatism. He states that the manner in which the surgeon dissects out the ureter is of great practical importance. Some clinicians regard denudation of the ureter as a harmless procedure whereas others consider it the cause of severe disturbances, such as atony, hydronephrosis and fistula formation; these conflicting views are to be explained by differences in the amount of care that is taken, during dissection, not to injure the adventia with the nerve elements contained in it. The author emphasizes the fact that, during operations on the ureter, the adventitia should be injured as little as possible and that sympathectomy and enervation of the ureter should be avoided.

Mixed Infections in Tuberculosis of Kidney.—Frisch gives the case reports of ten patients with tuberculosis of the kidney complicated by mixed infections. Cultivation of specimens of urine removed aseptically revealed streptococci twice, staphylococci three times and bacteria of the colon group five times. The author states that the infection of existing tuberculous lesions of the urinary tract with other bacteria is a complication of considerable importance. Whether the infection is exogenous (cystoscopy or catheterization) or endogenous (through the blood vessels or lymphatics) is of slight significance, since in either case the overgrowth of bacteria renders the diagnosis difficult and the secondary bacteria cause additional injury of the diseased organ. On the basis of his clinical experience the author is convinced that the Colombino symptom (characteristic changes in leukocytes in urine) is of value, particularly in the cases in which a definite diagnosis cannot be made from the cystoscopic examination or from the examination of the urine for tubercle bacilli.

Changes in Kidney Following Division of All Its Nerve Fibers.—In experiments on dogs de Gironcoli found that division of all the nerve fibers of a kidney did not produce marked anatomicopathologic changes in the organ. This fact corresponded to the results of functional tests which showed that a few days after division of all the nerve fibers of a kidney it functioned sufficiently to keep the animal alive.

Resection of Last Rib to Facilitate Exposure of Kidney.—Halbfas-Ney states that the fear of rib resection in operations on the kidney is unjustified. The supplementary operation greatly facilitates the exposure of the kidney, is harmless and does not cause any disturbances in the postoperative period.

Zentralblatt für Gynäkologie, Leipzig

53: 1281-1360 (May 25) 1929

Contractions of Veins and Arteries of Placenta. W. Schmitt.—p. 1282.
Intervillous Spaces in Placenta in First Month of Pregnancy. H. Meyer-Rüegg.—p. 1292.
*Physiologic Carbonuria in Pregnancy. A. Bock.—p. 1296.
Microsurgical Experiments with Human Spermatozoa. G. L. Moench and H. Holt.—p. 1300.
Bilateral Ovariectomy Early in Pregnancy. E. Waldstein.—p. 1305.
*Tuberculosis of Pubic Bone with Abscess of Vagina. P. Wirz.—p. 1313.
Spastic Contraction of Cervix Uteri During Labor. J. P. Greenhill.—p. 1316.
*Spontaneous Rupture and Hematoma of Rectus Abdominis Muscle in Pregnancy. K. Schroeder.—p. 1320.
*Examination of Vagina in Gonorrhea in Children. S. Haskin.—p. 1323.
*Vulvovaginal Myiasis. C. Correa.—p. 1325.
*Transitory Fever in the New-Born. L. Löfkovits.—p. 1327.

Physiologic Carbonuria in Pregnancy.—In determinations of the urinary quotient C : N in a pregnant guinea-pig for twenty-four successive days before labor, Bock found that the quotient rose steadily from 2.511 to 3.380. In a healthy nonpregnant person on a test diet and in body weight and nitrogen equilibrium, he found a quotient of 0.855. In two healthy pregnant women under the same conditions he found urinary quotients of 1.13 and 1.21, respectively. He therefore concludes that in pregnancy there is a physiologic increased excretion of carbon in comparison with nitrogen.

Tuberculosis of Pubic Bone with Abscess of Vagina.—Wirz states that the first symptom of tuberculosis of the pubic bone is usually an abscess. In the beginning of the condition pain and disturbances in gait are rare and not characteristic. Fixed abscesses lie above the symphysis, on either side of the midline, and may be confused with hernias. Gravitation abscesses appear in the region of the labia, the rectum and the inner surface of the thigh and may be confused with bartholinitis, cysts and periproctitis. The author reports a case of tuberculosis of the pubic bone in a woman, aged 19, in which the abscess developed in the vagina. He explains this localization of the gravitation abscess by assuming that the primary tuberculous process was situated near the posterior surface of the pubic bone and near the midline. As a result the pus entered the preperitoneal cavity and from there, passing along the anterior wall of the levator ani muscle and around the urethra, it reached the vagina. In the differential diagnosis of this condition osteomyelitis and osteosarcoma must be considered; the latter condition may simulate tuberculosis very closely. Except in pregnancy the prognosis in tuberculosis of the pubic bone with abscess formation is good. The diseased bone should be removed surgically, particularly in sequestrum formation and in mixed infections. Postoperative roentgen irradiation is sometimes of value. Early in the disease conservative measures (rest, roentgen irradiation and dietetic treatment) may give good results.

Spontaneous Rupture and Hematoma of Rectus Abdominis Muscle in Pregnancy.—Schroeder reports a case of spontaneous rupture and hematoma of the rectus abdominis muscle in a woman, aged 32, who had had two normal labors and was in the tenth month of her third pregnancy. The rupture occurred during a violent attack of coughing. In the treatment of the condition repair of the rupture was combined with cesarean section.

Examination of Vagina in Gonorrhea in Children.—According to Haskin none of the methods now in use in the examination of the vagina in gonorrhea in children give one an idea of the condition in the upper portion of the vagina, especially the vault. In order to examine thoroughly the entire vagina, the author devised a new method for indirectly obtaining material for examination. He presses a large sterile watch-glass on the perineum just below the commissure and injects a sterile solution of sodium chloride into the vagina; the outflowing solution is caught in the watch-glass and examined for floating particles resembling pus; if such particles are found they are picked up with a sterile platinum loop, transferred to a glass slide and examined for gonococci. To facilitate the examination of the injection fluid for flocculi of pus, the watch-glass is held against a black background.

Vulvovaginal Myiasis.—Correa reports a case of vulvovaginal myiasis in which he removed twelve larvae of *Cochliomyia* from the vagina of a young woman one month after a normal labor.

Transitory Fever in the New-Born.—Löfkovits noted transitory fever in 6 per cent of 100 new-born infants. In 100 new-born infants who were given tea to drink beginning six hours after birth and corresponding to the body weight, not a case of transitory fever was noted. The author believes, therefore, that transitory fever in the new-born is a thirst fever.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

73: 1681-1792 (April 6) 1929

Vitum Cordis on Neurosis Cordis? W. A. Kuenen.—p. 1682.
"Interference Dissociation." F. S. P. van Buchem.—p. 1692.
Psychiatry and Psychoanalysis. T. van Schelven.—p. 1703.
*The Widal Test and Fixation of Complement in Typhoid. D. Herderschée.—p. 1708.
*Pontile Angle, Fetalization and Microcephalia. H. C. Jelgersma.—p. 1711.

The Widal Test and Fixation of Complement in Typhoid.—As the result of his comparative researches in a series of cases of typhoid, Herderschée concludes that, for the diagnosis of typhoid, the Widal test, especially when it is applied repeatedly, has greater value than the fixation of complement test.

Pontile Angle, Fetalization and Microcephalia.—Jelgersma announces, as a new observation, that microcephalia is usually associated with an enlarged pontile angle.

Finska Läkaresällskapets Handlingar, Helsingfors

72: 233-312 (April) 1929

Bilateral Hydronephroses Due to Congenital Narrowing of Upper End of Both Ureters. A. Krogius.—p. 240.
Effect of Light on Neutrophil Granulocytes in Normal Human Blood. A. Wallgren.—p. 253.
*Postoperative, So-Called Prophylactic Irradiation in Cancer of Breast. G. A. Wetterstrand.—p. 261.

Postoperative, So-Called Prophylactic Irradiation in Cancer of Breast.—The results of preventive after-treatment in Wetterstrand's fifty-five cases, observed for from one to eight years, show that of the nine patients in the first group (Steinthal), 89 per cent have survived the three-year period; of the thirty-eight in the second group, 42.1 per cent, and of the eight in the third, 25 per cent. Of the thirty-eight, 26.3 per cent have survived the five-year period. Moderate doses in series were given in all cases. The author considers postoperative prophylactic irradiation of considerable value in the fight against mammary cancer.

Hospitalstidende, Copenhagen

72: 439-466 (April 25) 1929

*Congenital Thoracic Cysts and Pulmonary Malformations in Roentgenogram. P. F. Møller.—p. 439.
Late Rupture of Extensor Pollicis Longus Muscle After Fracture of Radius. E. Lassen.—p. 460.

Congenital Thoracic Cysts and Pulmonary Malformations in Roentgenogram.—Møller reports a case of congenital mediastinal cyst with roentgen diagnosis and recovery after operative treatment; also five cases of bronchiectatic cysts in the lungs, likewise diagnosed on roentgen examination, four having been found accidentally. Diagnosis of these conditions, he says, is not difficult because of the extraordinarily slight clinical symptoms and the characteristic roentgen changes. Special attention is called to the fact that the caverns are sharply defined by fine, meshlike condensations without intervening lung tissue and infiltrations and irregularly encroach on each other.

72: 467-494 (May 2) 1929

Italy's Fight Against Malaria: Impressions from Visit in Fall of 1928. V. Jensen.—p. 481.
*Malignant Anthrax. G. Jensen.—p. 488.

Malignant Anthrax.—A case of hyperacute anthrax with marked meningitic symptoms and fatal outcome after forty-eight hours is reported by Jensen. The patient had taken part in slaughtering a cow later found to have anthrax. The starting point of the infection was a minimal inoculation pustule on the hand, without local or regional reaction. A general disturbance set in three days after infection. Limited, unilateral edema of the neck and suggillation of the lower right eyelid were seen. Lumbar puncture gave a diffuse hemorrhagic fluid positive for anthrax bacilli. Anthrax bacilli were also demonstrated in the secretion from the cutaneous lesion and in the peripheral blood.

72: 495-520 (May 9) 1929

Roentgen Apparatus for Diagnosis. J. Meyer.—p. 495.
*Course of Infection After Oral Administration of Bacillus Aertrycke (Breslau) in Mice on B Vitamin-Free Diet. H. C. A. Lassen.—p. 506.
Micrometry of Red Blood Corpuscles. M. C. Lottrup.—p. 513.

Course of Infection After Oral Administration of Bacillus Aertrycke (Breslau) in Mice on B Vitamin-Free Diet.—Lassen found no noticeable lowering of resistance toward the Breslau strain in mice on a diet not containing any vitamin B.

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91: 499-518 (June 13) 1929

Occupational Therapy. H. I. Schou.—p. 499.
*Insulin Treatment of Undernutrition in Tuberculous Patients. A. Mårtensson.—p. 506.

Insulin Treatment of Undernutrition in Tuberculous Patients.—Mårtensson describes fifteen nondiabetic, tuberculous patients treated with insulin in small doses. There was an average weekly gain in weight of 487 Gm. during the insulin therapy, which lasted, on an average, four weeks, as against an average weekly loss of weight of 20 Gm. during the usual sanatorium treatment, continued for an average of 144 days before treatment with insulin.

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